30 CENTS

Consumers' Research Bulletin

January 1951

Electric Food Mixers . . . 5

Home Permanent Waves . . . 12

1951 Automobiles — Preliminary Reports . 17

Clothes Dryers . . . 22

FOR THE HOME

Fuel Oil for Oil Burners . 11
Electric Range Broiler Tests . 15
Gas Refrigerators, Potential Hazard . 16
Six Electric Blankets, an Electric Sheet, and a Foot Warmer . 20
Astral Refrigerator—Final Report . 21

MISCELLANEOUS

Bicycles, Their Care and Safe Operation . 14
Causes of Tire Failures . 19
Men's Cotton Pajamas . 24
Winter Driving Hazards . 26

Off the Editor's Chest . 2
The Consumers' Observation Post . 3
Ratings of Motion Pictures . 27
Phonograph Records — *Walter F. Grueninger* . 31

CONSUMERS' RESEARCH

Vol. 27 • No. 1 **BULLETIN** January 1951

Off the Editor's Chest

FOR the past decade and a half there has developed a myth, carefully fostered by interested parties, that it was the aim and duty of the Federal government to care for the people's "social welfare" and provide for their economic well-being by bringing about in some necromantic fashion a steady increase in their standard of living. Many, indeed, have been under the illusion that it was possible for the government by some hocus pocus to assure them of a constantly rising standard of living and ease and comfort in old age. If such people read the papers carefully last fall when the defense program authorized by the 81st Congress was getting under way, they must have been shocked and disillusioned by their misplaced trust or at the very least bewildered, for the point was made in speech after speech by Administration spokesmen that the standard of living of the citizens of the United States *is too high in comparison with that of the rest of the world* and must be cut back; that there is too much money in the hands of consumers, and that taxes must be increased to "syphon away the excess funds," and so to cut consumers' spending and "reduce the danger of inflation."

Housewives who struggle with the size of the weekly grocery bill must certainly have felt like saying, "Who, me?" when told that their excess purchasing power was forcing prices up. Yet that was the explanation advanced by Department of Agriculture experts for the rise in the price of pork from $16 a hundredweight early in the spring to $20 a hundredweight early in June, in spite of a near record crop of 37 million pigs. In September 1950, Secretary of Commerce Charles Sawyer in a radio interview warned that civilian sacrifices must be made, but that we would still have a "high and happy" standard of living. "Not as high as it would have been had it not been for the critical situation in which we find ourselves," he said, "but I am not so sure that we won't be just as well off. We may be even better off with a certain amount of self-discipline."

Lower standards of living and "discipline" were also advocated by Economic Mobilization Chief Stuart Symington in an interview the middle of October 1950 in which he called for higher taxes, stiffer curbs on credit and installment buying, and longer working hours, and for further "cuts and sacrifices." Although family budgets were already hard hit by the new taxes that went into effect on October 1, 1950, Mr. Symington called for "strong credit controls to cut down civilian buying. We must have much higher taxes, on a 'pay-as-you-go'

(Continued on page 26)

Consumers' Research functions to provide unbiased information on goods bought by ultimate consumers. For their benefit (not for business or industry) and solely with the funds they provide, CR carries on tests and research on a wide variety of goods, materials, and appliances, and publishes the findings in CR Bulletin. Consumers' Research is a non-profit institution, and is organized and operates as a scientific, technical, and educational organization.

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Symbols used to indicate sources of data and bases of ratings: **A**—recommended on basis of quality; **AA**—regarded as worthy of highest recommendation; **B**—intermediate with respect to quality; **C**—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; **1, 2, 3**—relative prices, **1** being low, **3** high. Note that price and quality are completely differentiated in CR's listings; **a quality judgment is independent of price**; 50, 51—year in which test was made or information obtained or organized by the staff of Consumers' Research.

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CONSUMERS' RESEARCH BULLETIN, issued monthly by Consumers' Research, Inc. Publication Office, Box 429, Easton, Pa. **Address orders and correspondence to Consumers' Research, Washington, N.J.** Single copy 30c. Subscription price (12 issues) $3 per year, U.S.A.; Canada and foreign, $3.50. For libraries, schools, and colleges, a special subscription of nine monthly BULLETINS (October-June, inclusive) is available at $2; Canada and foreign, $2.50. ¶Responsibility for all specific statements of fact or opinion at any time made by Consumers' Research lies wholly with the technical director and staff of the organization. Entered as second-class matter November 9, 1934, at the Post Office at Washington, N.J., under the Act of March 3, 1879; additional entry at Easton, Pa. Copyright, 1951, by Consumers' Research, Inc., Washington, N.J. ●● Printed in U.S.A. ●● CONSUMERS' RESEARCH BULLETIN is on file in many school, college, and public libraries and is indexed in Industrial Arts Index and in the Readers' Guide to Periodical Literature. ●● Beginning with the 1949 volume, microfilm copies of complete volumes of CONSUMERS' RESEARCH BULLETIN will be available (only to regular subscribers to CR BULLETIN) from University Microfilms, 313 North First St., Ann Arbor, Mich.

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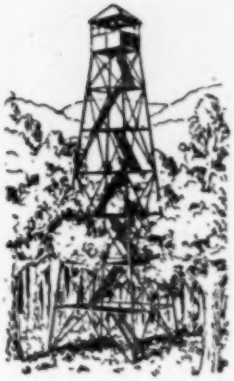


The Consumers' Observation Post

CANNED TOMATOES and tomato products like catsup, chili sauce, and tomato juice are in short supply. Unfavorable weather, a blight in certain sections, and a strong demand for fresh tomatoes combined to cause a shortage of tomatoes for canning. The pack is put at 30 to 50 percent under that of last year in certain sections. One result has been an increase of prices of tomato products all along the line.

* * *

PRIVATE AUTOMOBILES are absolutely essential to civilian economy and to civilian defense in wartime, warned the American Automobile Association at its annual convention last fall. The association accused Federal officials of failure to prepare an adequate program for providing tires, gasoline, batteries, and other essentials for highway transport in an era of government controls of materials and supplies. Officials must be made to recognize the fact that an automobile is a necessity of daily living to those who live outside urban areas served by bus, trolley, subway, and elevated lines.

* * *

CHRONIC BARBITURATE INTOXICATION is a steadily increasing health problem. The production of barbiturates, sometimes referred to as "goof balls," is considered to be far in excess of the amount needed for therapeutic purposes and runs to approximately 24 doses per person per year in the United States. An excellent study by Dr. Harris Isbell and a number of medical colleagues at the U. S. Public Health Service Hospital at Lexington, Ky., published in July 1950, indicated that chronic barbiturate intoxication is a dangerous condition, akin to chronic alcoholism. Persons who take large amounts of these drugs were found to be confused, unable to think clearly, and to have poor judgment. They are a serious menace if they attempt to drive a car; are prone to fall; and are likely to fall asleep while smoking and so to set serious fires.

* * *

IN SPITE OF REPORTS OF WOOL SHORTAGES, the public has shown no inclination to step up purchases of wool clothing, comments A. W. Zelomek, economist for the Fairchild Publications. The military draft appears to have exerted a restraining influence in the men's wear field. No doubt women feel that something will be developed to take the place of wool that will serve their purposes just as well. It will be interesting to see whether wool, like silk, will finally be displaced by man-made fibers.

* * *

GROCERY STORE CAKES are held in low regard by the majority of women queried on the subject by the Bakers of America. Nine out of ten women interviewed said that they baked sometimes. Home-baked cakes cost on the average 74 cents apiece; 47 cents if a cake mix was used. The retail bakery cakes run to about $1; the grocery store cakes, 36 cents. The majority of women believed that substitutes, inferior shortenings, and artificial flavorings are used in the grocery store product.

* * *

MEN'S SHIRTS, PAJAMAS, AND OTHER COTTON GARMENTS are higher in price this year. In part the rise is due to increases in the price of fabrics, but an important factor also was the 10 cents an hour wage increase and pension benefits obtained by the Amalgamated Clothing Workers union last fall.

* * *

WHO READS LABEL DIRECTIONS for proper use of a product? Not the housewife, laments Soap and Sanitary Chemicals. Acting on the theory that misuse of

a product through failure to follow directions for its use is the greatest enemy a product and its manufacturer can have, the National Agricultural Chemicals Association is undertaking a drive for more careful reading of labels. The magazine comments that the Association has a tough job on its hands, but not so tough as that faced by the average manufacturer of polishes, floor waxes, cleaners, disinfectants, and other household chemical specialties, another field in which the editor feels that such educational publicity is sadly needed. He admits, however, that many labels are hard to read and need improving in other ways.

* * *

THE HIGH COST OF FOOD is one of the chief topics of complaint wherever more than one family purchasing agent gather together. Had housewives generally read a dispatch buried in the back of the New York Times last fall, they would have been still more irritated, for the item reported a survey of Commodity Credit Corporation operations that indicated this government buying agency expected to lose nearly a billion and a half dollars of taxpayers' money on the price support program this fiscal year. On potatoes alone, bought up for destruction, the government was expected to lose anywhere from seventy-five million to ninety million dollars. On the over-all expenditure, every man, woman, and child was estimated as paying about $90 each per year to keep in operation the government's program of holding food prices at a high level. Butter, eggs, and milk have been bought with tax money and stored in caves and warehouses, not to be sold except to charitable institutions and to foreign countries at bargain prices. None of this food is permitted to be sent, for example, to feed our troops and allies in Korea.

* * *

RAYON is expected to take the place of high-priced wool in popularly-priced carpets and rugs. All major carpetmakers, according to the magazine Business Week, are now turning to rayon, and Bigelow Sanford has been experimenting with man-made fibers for 16 years. Nylon at the present time isn't available in sufficient quantity nor cheap enough to be used extensively. Some carpet manufacturers are using a 50-50 combination; others are trying combinations of 70 percent wool with 30 percent rayon, 60 percent wool with 40 percent rayon, and even 100 percent synthetic fiber. Only time and experience will tell whether the rayon will prove satisfactory in floor coverings, but there is a possibility that it will eliminate wool from the carpets of the future.

* * *

USED CRANKCASE OIL accumulated at garages and service stations is a potential fire hazard. Its disposal represents a difficult problem, for it cannot be thrown down the drain because it is flammable, points out Loss Prevention News Letter, a fire and accident prevention publication of the Hardware Mutuals, at Stevens Point, Wis. Frequently, where large amounts of drain oil are accumulated, it is stored and used for fuel in oil-burning furnaces. This practice is dangerous because the oil contains a large amount of gasoline which may burn with small explosions that will cause serious mechanical injury to the furnace, overheating, or even an explosion sufficient to wreck the furnace. Used crankcase oil, advises the insurance letter, should always be stored in metal drums and placed in fireproof storage vaults, or outside and away from buildings, where it can be collected by companies that process it by redistillation. It should never be stored in buildings or used for fuel.

* * *

CHEMICAL SPECIALTIES for cleaning phonograph records and removing the static electrical charge from the surface of vinylite records are making their appearance on the market. One called Goodell Record-Life (Minnesota Electronics Corp., 97 E. Fifth St., St. Paul 1) sells at a price equivalent to 42 cents an oz. ($2.50 per 6-oz. bottle), and another by the name of Walco Stati-Clean (Walco Products, Inc., 60 Franklin St., East Orange, N.J.), for "vinylite" and "unbreakable plastic records only," costs around $1 per oz. Whether the use of such liquids is worth the time and expense involved in their application is a matter for the individual record fancier to determine for himself. On LP

(The continuation of this section is on page 29)

Checking the constancy of input voltage during the life test.

ELECTRIC FOOD MIXERS

WITH the large number of demands on their time and energy, many housewives have found that an electric mixer aids very greatly in preparing meals. This is especially true in the preparation of such foods as cakes, cookies, or mashed and whipped potatoes which is time-consuming or calls for strenuous work if mixed by hand. Also to the housewife who juices even half a dozen oranges every morning, the use of the juicer attachment can be considered quite an improvement in convenience over the old-fashioned hand reamer.

The tests on 10 brands of electric mixers were divided into four main groups: a number of electrical tests, an engineering examination, a practical use test, and an endurance or life test.

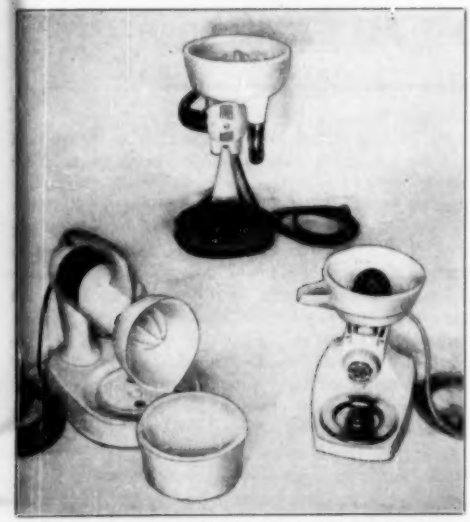
The electrical tests included measuring with appropriate instruments the electrical leakage (an indication of possible shock hazard) at room temperature and humidity, and again after a 24-hour exposure to 85 percent relative humidity at room temperature. This was done on all mixers at the start of the tests and on those mixers which had successfully completed the life test; the significant findings on leakage are noted in the listings. The mixers were also tested for breakdown of the insulation between the wiring and the frame by raising a test voltage gradually to 900 volts, holding it at that value for one minute, and lowering it gradually to zero. This was done after the completion of the use tests at room temperature and also at the operating temperatures of the mixers. Failures, where they occurred, are noted in the listings. In addition, the samples that withstood the two proof-voltage tests mentioned above were given proof-voltage tests under humidified conditions. Of those subjected to the latter, only the samples of the *General Electric*, *Gilbert*, *Hamilton Beach*, *Sunbeam*, and *Westinghouse* passed satisfactorily. Those mixers which had successfully completed the life test were also tested for the electrical resistance of the insulation, and resistances were found to be fully satisfactory.

Temperatures of parts likely to be touched were measured, and none were found to exceed CR's limits of 130°F for metals and 150°F for other ma-

terials. The mixers were tested for radio interference on a.c. when plugged into the same line with the mixer and radio at close range, and again with a distance of approximately 10 feet between them.

The engineering examination of the mixers included finish, components, oiling requirements, ease of changing brushes, stability of mixers with and without attachments, speeds and speed controls, height, weight of mixer with beaters but without bowls, weight of portable unit consisting of the motor and beaters detached from the stand, capacity of bowls, noise in operation at the beginning and end of the tests, and other characteristics of construction affecting convenience, performance, and safety.

Hamilton Beach Model G



Different Methods of Mounting Juicers

Top: Sunbeam. Gilbert, Hamilton Beach, and Westinghouse, similar.
Lower left: Dormeyer. Kenmore, Kitchen Aid, Universal, and Wards, similar.
Lower right: General Electric.

Each mixer was given a practical use test to determine its convenience and performance in carrying out kitchen tasks involving varying loads. Mixes representing light, medium, and heavy loads were prepared in each mixer; records were made of the total watt-hours, the maximum watts, the length of time for each operation, and the speed setting used (the manufacturer's recommended speed setting was used for all operations if available). The amount of assistance necessary in mixing, any splattering, ease of cleaning, and other factors were noted throughout the use test. In making milk shakes for the light-load test, the maximum speed possible was used. Milk shakes were prepared in each mixer by using one pint of milk and two scoops of ice cream, and the relative volumes of the final mix after a specified mixing time were noted. A standard sponge cake recipe was used for the medium-load test, and the texture and height of each cake, baked under standard conditions, were noted. A refrigerator cookie batter was prepared to determine the action of the mixers under heavy load. The mixers were also tested for convenience in use and performance in mashing and then in whipping potatoes, using the motor and beaters as a "portable unit" (with the exception of the *Kitchen Aid* and *Kenmore* which could not be removed from the base) for a specified length of time. An examination of the mix was then made for lumps and texture.

The juicers were given a use test consisting of juicing a half-dozen oranges, and the orange juice obtained was checked for both volume and quality (absence of seeds and pulp and presence of peel oil flavor). Three of the mixers had plastic reamers, and unless plastic is specified in the listings the reamer was made of a ceramic material. A half pound of raw meat was ground in the grinder or chopper unit, and the action of the grinders and the appearance of the ground portion were noted. None of the grinders was considered to have ground the meat satisfactorily, however; the results shown as "good" in the table are only relative and compared very unfavorably with that obtained from the butcher. The particular housewife would hardly find the appliance entirely satisfactory, for example, in grinding round steak or other tough meat. The so-called "power units" used with the grinders do not actually give additional power but serve to decrease the speed and increase the driving torque at the end of the shaft, but for convenience are referred to in the listings as power units. A summary of the performance in each of the use tests is given in the accompanying table.

In addition to the above-mentioned tests, the mixers were given a life test of 50 hours actual

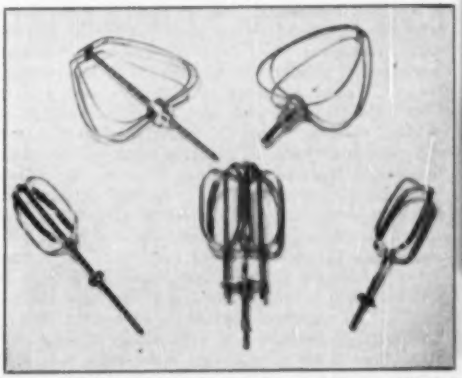
running time of 15 minutes on and 15 minutes off to help toward a judgment of relative life expectancy of the mixers. During the first 25 hours, the mixers were run at high speed in air (no load), and the second 25-hour run was under load in a special heavy liquid mix with the speed control at the medium setting.

All the mixers tested were listed by Underwriters' Laboratories except the *Wards*; only two of these, the *Kenmore* and the *Westinghouse*, carried the UL seal of approval on the mixer. Unless the mixer carries this seal for identification, the consumer has no way of knowing whether or not the appliance is listed unless he has access, as few consumers do, to the periodic lists published by Underwriters' Laboratories.

The finish on all the mixers was smooth enamel and was easily cleaned except the base of the *Sunbeam* which had a wrinkle finish. The bowls were of the heavy, readily breakable, glass type, except the *Kenmore* bowl which was made of a plastic material. Two separate beaters were provided with each mixer except for four makes; these were the *General Electric*, which had three, the *Kenmore* and *Kitchen Aid*, each of which had one large beater, and the *Hamilton Beach*, which had the two beaters in a single unit with a vertical bar in front acting as a guard. It was noted also that on those mixers which had the two beaters mounted side by side across the width of the mixer, the direction of rotation of the beaters on some was such that the bowl turned clockwise, while on others the direction of rotation of the beaters was such that the bowl turned counterclockwise. On those mixers where the bowl turned counterclockwise, the *Dormeyer*, *Universal*, and *Wards*, the beater rotation was such that fingers or a spatula could be dragged into the beaters from the front; however, with the more desirable clockwise rotation as on the *Hamilton Beach*, *Sunbeam*, and *Westinghouse*, fingers and spatulas would be pushed away from the beaters at the front, and would have to be introduced between the beaters and the column supporting the mechanical elements before being dragged into the beaters; this arrangement afforded a considerable degree of protection against the possibility of injury. The *Gilbert* beaters were set at an angle (one slightly behind the other) and by turning the motor unit horizontally could be operated at either side of the bowl; when on the left side with the bowl turning counterclockwise, the side of the bowl afforded protection, and when on the right side, with the bowl turning clockwise, there was no protection. The *General Electric* beaters were mounted one behind the other along the length of the mixer casing; two beaters are used in the small bowl and three beaters in the large bowl, and no protection was afforded. The *Kenmore* and *Kitchen Aid* each used a single large beater, which considerably lessened the possibility of injury; how-

Sunbeam Mixmaster Model 9

Universal Model EA6205



Types of Beaters Used on the Mixers Tested

Top row, left to right: Kenmore, Kitchen Aid.

Bottom row: Universal, Hamilton Beach, General Electric.

All not shown are similar to the Universal shown at lower left. Note that only the General Electric and Kitchen Aid beaters did not have a central shaft; absence of this made them somewhat easier to clean.

Summary of Relative Performance of Mixers in Use Tests

Mixer	Milk Shakes	Whipping Potatoes	Sponge Cake	Refrigerator Cookies	Juicers	Grinders*
Dormeyer 4200	fair	very good	good	good	fair	poor
General Electric 133M9	good	good	good	good	very good	good
Gilbert B29	fair	very good	fair	good	poor	fair
Hamilton Beach G	fairly good	very good	good	good	very good	fair
Kenmore 34—8239	fairly good	fairly good	poor	fair	fair	poor
Kitchen Aid 3B	good	good	good	good	fair	good
Sunbeam Mixmaster 9	fair	good	good	good	good	poor
Universal EA6205	good	good	good	good	fair	poor
Wards 86—2024	good	very good	poor	good	fair	fair
Westinghouse FM81	fairly good	very good	good	good	very good	good

*None was very satisfactory (see text).

ever, it was necessary to stop the mixer in order to assist in the mixing because of the small clearance between the beater and the bowl.

Prices given in the listings are those obtained at the time the mixers were purchased.

A. Recommended

Hamilton Beach, Model G (Hamilton Beach Co., Div. of Scovill Mfg. Co., Racine, Wis.) $52, including 2 beaters in one unit with vertical bar; 1 small (1¼ qt.) and 1 large (3¼ qt.) bowl; heavy glass juice extractor bowl with metal spout, black plastic reamer, metal strainer; heavy metal grinder with pestle ($39.50 less grinder). (ac-dc) Weight of mixer with beaters and without bowls, 9⅝ lb.; of portable unit, 5⅝ lb. (second lightest of those tested). Motor tilts back; appliance is rather difficult to carry without pinching hand, because of the location of the hinge half way down the supporting column. Radio interference, measured on a.c., and noise in operation, very moderate. Speed control: sliding metal knob, numbered 1-10, and with fairly easily used indication of what may be mixed at each speed application (number and intended use appears, one setting at a time, under a magnifier near front of handle). Revolutions per minute of beaters with no load at low, medium, and high switch settings, 300, 620, 1050. Ease of removing mixer from base, very good. Ease of inserting and removing beaters, good (held in place by setscrew); of juicer, good; of grinder, fair. Had power unit attachment. Relatively little danger to fingers from beaters (see text). Oiling required in 2 oil holes (not specifically marked), 2 drops a month in each. Brushes, easy to replace. Leakage current, negligible. Found very convenient in use. **2**

Sunbeam Mixmaster, Model 9 (Sunbeam Corp., 5600 Roosevelt Rd., Chicago 50) $52, including 2 separate beaters, 1 plastic knob to be attached to beater for driving bowl, which can be lost easily; 1 small (1¼ qt.) and 1 large (3½ qt.) bowl; heavy glass juice extractor bowl with metal spout, reamer (of ceramic material), metal strainer; lightweight metal grinder with pestle ($39.50 less grinder). (ac-dc) Weight of mixer with beaters and without bowls, 8⅞ lb.; of portable unit, 6 lb. Motor tilts back, but beaters do not clear bowls. Radio interference, considerable at close range, negligible 10 ft. away. Noise in operation, very moderate. Speed control: large black plastic knob at rear of motor, numbered 1-10, with fairly easily used indications of what may be mixed at each speed. Revolutions per minute, 300, 690, 1050. Ease of removing mixer from base, fair. Ease of inserting beaters, poor; of removing, good, using beater ejector (handle turned to side); of juicer, good; of grinder, fair. Had power unit attachment. Relatively little danger to fingers from beaters. Oiling required at 5 unmarked points every month, when usage is heavy. Manufacturer recommends inspecting gear grease once a year. Brushes, easy to replace. Leakage current, negligible. Found fairly convenient in use. **2**

B. Intermediate

Universal, Model EA6205 (Landers, Frary & Clark, New Britain, Conn.) $39.95, including 2 separate beaters; 1 small (1¼ qt.) and 1 large (3 qt.) bowl; plastic juice extractor bowl, reamer, plastic strainer (separate, fits on small bowl); heavy metal grinder with pestle ($37.50 less grinder). (ac-dc) Weight of mixer with beaters and without bowls, 8¾ lb.; of portable unit, 6⅝ lb. (second heaviest of those tested). Motor tilts to one side. Radio interference at close range, considerable; at 10 ft., moderate. Noise in operation, moderate.

Speed control: sliding plastic knob, numbered 1-10, with easily used speed selection chart. Revolutions per minute, 300, 740, 1050. Ease of removing mixer from base, poor. Ease of inserting and removing beaters, good (beater ejector on front end of handle); of juicer and grinder, fair. Power unit built in. Greater than average danger to fingers from beaters (see text). Manufacturer states oiling of appliance is not necessary with normal use. Brushes, difficult to replace. Leakage current on both samples tested, negligible. Found convenient in use, but mixer tended to tip over when the motor was tilted back with bowl removed from the turntable. **1**

Kitchen Aid, Model 3B (The Hobart Mfg. Co., Troy, Ohio) $72, including 1 large beater; 1 bell-shaped (3 qt.) bowl; heavy glass juice extractor bowl, sharply pointed white plastic reamer, wire mesh strainer that clamps to lip of extractor bowl; lightweight metal grinder with pestle ($59.50 less grinder). (ac-dc) Weight of mixer with beater and without bowl, 13⅛ lb. (heaviest of those tested); cannot be used as portable unit. Motor tilts back. Radio interference, considerable at close range, negligible at 10 ft. Noise in operation, very moderate. Speed control: plastic knob on top of mixer, numbered 1-10, with fairly easily used speed chart. Revolutions per minute, 170, 390, 640 (beater has "planetary action" and stationary bowl reducing, with some mixes, the amount of outside assistance necessary). Because of the vibration of this mixer, it would need a steady work surface. Ease of inserting beater, good; of removing, poor; of inserting and removing juicer and grinder, fair. Power unit built in. Relatively little danger to fingers from beater (see text). Manufacturer states oiling not necessary under normal use. Brushes, easy to replace. Some shock hazard present on both samples tested (leakage current, 1.2 ma.). Fairly convenient in use. **3**

• • •

The following, although rated *B. Intermediate*, are considered less satisfactory than the preceding ones because of failures of speed controls during tests.

General Electric, Cat. No. 133M9 (General Electric Co., Bridgeport, Conn.) $49.90, including 3 separate beaters; 1 small (2 qt.) and 1 large (4 qt.) bowl; 2-piece plastic juice extractor bowl and strainer, black plastic reamer; heavy metal grinder with pestle ($34.95 less grinder). (a.c. only) Weight of mixer with beaters and without bowls, 8⅜ lb. (second lightest of those tested); of portable unit, 4⅜ lb. (lightest of those tested). Motor tilts back. Radio interference, considerable. Noise in operation, moderate. Speed control: large knob on front of mixer, numbered 1-12, with fairly easily used speed chart. Revolutions per minute at low, medium, and high switch settings, 350, 820, 980. Ease of removing mixer from base, good. Ease of inserting and removing beaters, poor; of juicer, good; of grinder, fair. Had power unit attachment. Greater than average danger to fingers from beaters (see text). Manufacturer states oiling not necessary. Brushes, difficult to replace. Only mixer having built-in light. Speed control on sample tested failed during life test, otherwise would have received an *A-Recommended* rating. Leakage current, negligible. Convenient in use. **1**

Gilbert, Type B29 (A. C. Gilbert Co., New Haven, Conn.) $43.75, including 2 separate beaters; 1 small (1¼ qt.) and 1 large (2½ qt.) bowl; heavy glass juice extractor bowl with metal spout, reamer, metal strainer; lightweight metal grinder with pestle ($37.95 less grinder). Weight of mixer with beaters and without bowls, 10¼ lb.; of portable unit, 6¾ lb. (heaviest of those tested). Motor tilts back. (ac-dc) Radio interference and noise

Kitchen Aid Model 3B

General Electric Cat. No. 133M9

Gilbert Type B29

Westinghouse Cat. No. FM-81

Dormeyer Model 4200

Kenmore Model 116 8238

in operation, considerable. Speed control: plastic knob on back of mixer, numbered 1-16, with easily used speed chart. Revolutions per minute, 420, 900, 1320. Ease of removing mixer from base, fairly good. Ease of inserting and removing beaters, fair; of juicer, good; of grinder, fair. Power unit built in (outlet cover somewhat difficult to remove). Relatively little to greater than average danger to fingers from beaters (see text). Oiling required in one oil hole (not marked), a few drops twice a year. Brushes, easy to replace. Some shock hazard present; leakage current, 0.8 ma. Speed control on one sample failed during use tests; second sample completed life test satisfactorily. Fairly convenient in use, but mixer tended to spatter ingredients, and motor became very warm in use. **1**

Westinghouse, Cat. No. FM-81 (Westinghouse Electric Corp., Springfield, Mass.) $57.20, including 2 separate beaters; 1 small (1½ qt.) and 1 large (3¾ qt.) bowl; heavy glass juice extractor bowl with metal spout, reamer, metal strainer; heavy metal grinder with pestle ($39.95 less grinder). (ac-dc) Weight of mixer with beaters and without bowls, 8 lb. (lightest of those tested); of portable unit, 5⅝ lb. Motor tilts back. Radio interference and noise in operation, considerable. Speed control: plastic knob, numbered 1-20, with no indication on the mixer of what may be mixed at each speed; the lack, however, was provided for by a table in the instruction book. Revolutions per minute, 130, 660, 1100. Ease of removing mixer from base, good. Ease of inserting beaters, good; of removing, fair; of juicer, good; of grinder, fair. Had power unit attachment (somewhat inconvenient to attach). Relatively little danger to fingers from beaters while running. Manufacturer states oiling not necessary. Brushes, difficult to replace. Leakage current, negligible. Speed control on sample tested failed during life test, otherwise would have been *A. Recommended*. Found very convenient in use. **2**

C. Not Recommended

Dormeyer, Model 4200 (Dormeyer Corp., 4300 N. Kilpatrick Ave., Chicago 41) $42.50, including 2 separate beaters; 1 small (1¼ qt.) and 1 large (3 qt.) bowl; plastic juice extractor bowl, reamer, plastic strainer (separate, fits on small bowl); lightweight metal grinder with pestle. Weight of mixer with beaters and without bowls, 9¾ lb.; of portable unit, 6¼ lb. Motor tilts to one side. (ac-dc) Radio interference and noise in operation, moderate. Speed control: sliding plastic knob, numbered 1-10, with easily used speed chart. Revolutions per minute at no load at low, medium, and high switch settings, 400, 640, 1100. Ease of removing mixer from base, poor. Ease of inserting and removing beaters, good (had beater ejector under handle, an undesirable location when used as portable appliance); of juicer and grinder, fair. Power unit built in. Greater than average danger to fingers from beaters (see text). Manufacturer states oiling not necessary with normal use. Brushes, difficult to replace. One sample failed proof-voltage test at operating temperature. Insulation of second sample showed satisfactorily high resistance at the end of the life test. Leakage current, negligible. Convenient in use. **1**

Kenmore, Model 116 8238 (Sears-Roebuck's Cat. No. 34—08238) $44.45, plus postage, including 1 large beater; 1 bell-shaped (3¾ qt.) plastic bowl; plastic juice extractor bowl, reamer, trapezoidal plastic strainer (fits in lip of extractor bowl and clogs easily, undesirable); heavy metal grinder with pestle ($39.50 less grinder). Weight of mixer with beater and without bowl, 10⅝ lb. (second heaviest of those tested); cannot be

used as a portable unit. Motor tilts back. (a.c. only — 25 to 60 cycles) Radio interference, considerable. Noise in operation, considerable. Speed control: black plastic knob on top of mixer somewhat difficult to turn, numbered 1-24, with easily used speed chart. Revolutions per minute, 210, 410, 825. Ease of inserting and removing beater, juicer, and grinder, fair. Power unit built in. Relatively little danger to fingers from beater while running (see text). Manufacturer states oiling not necessary. Brushes, easy to replace. One of the 2 samples tested showed some shock hazard (leakage current, 1.0 ma.). Found relatively inconvenient in use. Tended to spatter ingredients and clog the center of the beater, and bowl needed assistance to turn. **1**

Wards, Model 2058A (Montgomery Ward's Cat. No. *86—2024*) $32.95, including 2 separate beaters; 1 small (1¼ qt.) and 1 large (3 qt.) bowl; plastic juice extractor bowl, reamer, plastic strainer (separate, fits on small bowl); lightweight metal grinder with pestle. Weight of mixer with beaters and without bowls, 9 lb.; of portable unit, 6¼ lb. Motor tilts to one side. (ac-dc) Radio interference, negligible. Noise in operation, moderate. Speed control: sliding plastic knob, numbered 1-10, with easily used speed chart. Revolutions per minute, 400, 740, 1000. Ease of removing mixer from base, poor. Ease of inserting and removing beaters, good (had beater ejector on front of handle); of juicer and grinder, fair. Power unit built in. Greater than average danger to fingers from beaters while running (see text). Manufacturer states oiling not necessary. Brushes, difficult to replace. One sample failed proof voltage at room temperature. The insulation on a second sample showed satisfactorily high resistance at the end of the life test. Leakage current, negligible. Found convenient in use, but required a great deal of assistance during some of the mixing processes. **1**

Wards Model 2058A

Fuel Oil for Oil Burners —
New Problems Arise from Changes in Refinery Practices

WITHIN the past 10 years there have been considerable changes in the characteristics of fuel oil offered for domestic burners. Because of the widespread introduction of catalytic cracked oil, it is a common fault, even within the oil-burner industry, to attribute the changes in the characteristics of the oil to this factor; actually the differences can be attributed to the extreme flexibility which the new catalytic processes offer the refinery. The greatly increased demand for diesel oils and kerosene has resulted in the removal of lighter fractions, which had formerly been allowed to remain in the fuel oil. As these light fractions were useful for starting the chain of progressive ignition, their removal has tended to make present-day fuel oils hard to ignite in some burners. The result has been an increase in the amount of soot produced, and in general, burners are more critical in operation and harder to adjust for today's fuel oil than they were for oils of some years ago.

According to two authors discussing this subject in the trade journal Fueloil and Oil Heat, July 1948, page 63, domestic burners can be divided into three classes in respect to sensitiveness to fuel quality. In order of increasing susceptibility to differences in quality of fuel, these are: (1) Pressure Atomizing Gun Burners, (2) Rotary Wall Flame Burners, and (3) Vaporizing Pot Burners.

The gun-type burner usually gives satisfactory performance over a wide range of fuel characteristics, with, however, a tendency to a sooty period at the start of each cycle. The rotary wall-flame burner is more critical in its response to oil characteristics, and requires use of No. 1 fuel oil in many cases. The pot burner is very sensitive to the characteristics of fuel and, for best performance, must usually be supplied with No. 1 oil or kerosene. (All three types of burner are of course likely to give trouble through the presence of sediment, which clogs nozzles, strainers, and control valves.)

Manufacturers are meeting the problem of the change in the characteristics of fuel oils by redesigning their burners to suit the special requirements of the "stripped" catalytic oils. One example is the new "Shell" gun-type burner head, a design which Shell permits a number of burner manufacturers to use without royalty.

Home Permanent Waves — CR's Report on 10 Well-Known Brands

HOME PERMANENT WAVES have become so popular that beauty shops all over the United States have complained bitterly that they are being put out of business, and in some cases they have taken various steps to combat the use of packaged permanents. The development of the cold-wave process based on a solution of ammonia and thioglycolic acid has considerably simplified the process of securing a permanent wave whether at the beauty shop or at home, with or without the help of a friend. It should be kept in mind that the type of solution used in the cold wave is based on the same essential materials, whether the product is for beauty shop or for home use. The wide variation in results is chiefly due to the greater skill and experience of the professional operator. It has been estimated that 90 percent of the success of a permanent is due to the skill of the person giving the wave; the other 10 percent depends on the use of a well-formulated waving solution.

In the early days of the cold wave, there were a number of reports of unhappy results from its use. Ill effects are still occasionally reported, which appear to be chiefly contact dermatitis. The Federal Food and Drug Administration and the American Medical Association have, on the basis of research and experiments, taken the position that the product is safe for normal use. The chief sufferers at present appear to be hairdressers who are in frequent contact with the solution in the course of their work. It is claimed by the trade that the earlier cold-wave solutions contained impurities, and had a high concentration of alkali present which was in itself largely responsible for irritations resulting from use of the wave products.

Figures are not available on how many cold-wave permanents are given each year, but they run to many millions. In comparison with this large number, the cases of unhappy results reported from their use are few in percentage, but, on the other hand, for the woman who experiences painful dermatitis or worse it is no consolation whatever to be told that her case is one of a tiny minority. The Journal of the American Medical Association, September 23, 1950, for example, reported two cases of temporary baldness following cold-wave permanents. To complicate the problem, medical experts are of the opinion that the patch test is not a reliable indicator of a possible allergic reaction to the product. The first use may produce no untoward effect whatever, but there may be a rash after the second, third, or even later applications. It is considered to be especially important to read carefully all directions for use of a particular cold-wave home permanent and follow them explicitly, observing the precautions and warnings to the letter. Consult your physician promptly on any sign of unpleasant aftereffects.

In view of the fact that the skill of the operator plays such a large part in the success or failure of a permanent wave, it is somewhat difficult to evaluate the various brands of home-wave permanents. On a health and safety basis, it is CR's opinion that in the light of scientific and medical evidence currently available, unhappy effects are likely to be experienced by only a few, and we have reconsidered our earlier position on cold-wave solutions for home use. In the hands of a careful user who follows directions, the danger of harm is likely to be no greater than in ordinary use of household chemicals found in drainpipe and toilet-bowl cleaners or home cleaning solvents.

On their chemical composition, it was the opinion of CR's consultant, a competent analytical chemist, that some brands had better balanced formulas than others. But even with a good product, he pointed out, women sometimes complain that their home-permanent curl does not stay in well, where frequently the cause of such difficulty is their own failure to use the neutralizer properly. The neutralizer is as important as the waving solution, and if it does not thoroughly penetrate each curl, some of the thioglycolate may remain on the hair and continue to act upon it. The time factor is also an important consideration in the success of a home cold-wave permanent. The length of time that the wave solution should remain on the hair varies to some extent with the type of hair. Some products allow for such differences by indicating in their directions the time required for fine, medium, and coarse hair; still another leaves the matter to the individual user to determine on a trial and error basis. In addition to variation in the type of hair, there is a direct relation between the strength of the ammonium thioglycolate in the wave solution and the time required for the job, although the directions for use of the various brands did not show any recognition of this factor. In many cases the distributors have provided themselves with an "out" in case of failure by suggesting that the user of their product make a test curl to determine the proper length of time required for contact of the waving solution with the hair.

Essentially all of the permanent-wave solutions were of the same type with the exception of *Crowning Glory* and *Smart-Kurl*. *Crowning Glory* wave

solution was based on the use of sodium thioglycolate; *Smart-Kurl* is a solution typical of that used by hairdressers for many years in connection with the heat type of permanent wave.

The ammonium thioglycolate in the other wave solutions gave them a faster acting time than the sodium thioglycolate solution of *Crowning Glory*. The higher the concentration of ammonium thioglycolate, the faster it should work. The price of the solution may also vary according to the amount of the chemical present. It must be continually kept in mind in using a cold-wave solution that it contains a very potent, even possibly dangerous, chemical. If it is left on the hair too long and if the neutralizer is not properly applied, the hair will likely break.

Neutralizers act by giving off oxygen. The three chemicals found in the neutralizers, sodium perborate, hydrogen peroxide, and potassium bromate are very similar in their action. The *Richard Hudnut* product was accompanied by a "neutralizer booster," and its function may be described as an agent, such as sodium acid phosphate, to lower the pH of the neutralizer to the acid side so as to give the hair greater luster. The acid treatment would be somewhat similar in effect to an acid (lemon or vinegar) rinse that some hairdressers recommend.

There is supposed to be a 20 percent federal excise tax on cosmetics, but just how this is computed on the home permanent-wave kits purchased for test is something of a mystery. In order that the cost of the various brands may be evaluated, the tax in each case is given, as well as the purchase price. Ratings are cr51.

Cold-Wave Type Home Permanents

A. Recommended

Lilt Home Permanent Creme-Oil Cold Wave (Procter & Gamble, Cincinnati) $2 (plus 13c federal excise tax) for 3½ fl. oz. wave lotion, 15 oz. fixative powder, 45 plastic curlers, end papers, rubber bands, and turban made of plastic. Refill kit without curlers, $1 plus tax. Essential ingredient of waving lotion, 8.6% solution of ammonium thioglycolate; neutralizer, potassium bromate. Contained lanolin (desirable). Contained a surface active agent, which makes for better penetration of the natural oil on the hair by the wave solution.

Richard Hudnut Home Permanent (Richard Hudnut, 113 W. 18 St., N.Y.C.) $2.75 (plus 25c federal tax) for 4 fl. oz. waving lotion, .55 av. oz. neutralizer, 2 fl. oz. rinse, 80 end papers, 60 curling rods (3 sizes). Refill kit without curlers, $1.50 (plus tax). Essential ingredient of waving lotion, 6.7% solution of ammonium thioglycolate; neutralizer, potassium bromate. Contained lanolin. Contained surface active agent.

B. Intermediate

The brands which follow are considered to be somewhat lower in the quality of the wave they will produce because — with one exception — their makers were held to have underestimated the proper minimum time required in relation to the concentration of ammonium thioglycolate present. The Sears-Roebuck wave indicated the proper minimum time but did not contain lanolin, which is considered to be a desirable ingredient.

Bobbi Pin-Curl Home Wave (The Bobbi Co., 330 E. Grand Ave., Chicago) $1.25 (plus 15c federal tax) for 4 fl. oz. waving lotion, .19 av. oz. neutralizer, 60 *Bobbi* pins. Essential ingredient of waving lotion, 5.2% solution of ammonium thioglycolate; neutralizer, sodium perborate. Contained lanolin. Analysis did not show presence of surface active agent.

Crowning Glory Cold Permanent Wave (Distributed by L. R. Kallman Co., Chicago 1) $2.98 (plus 30c federal tax) for 3 fl. oz. wave solution, 1 fl. oz. neutralizer, 1 fl. oz. shampoo, 40 curlers. Essential ingredient of wave solution, sodium thioglycolate, equivalent in action to a 3.6% solution of ammonium thioglycolate; neutralizer, hydrogen peroxide. Contained trace of lanolin. Analysis did not show presence of surface active agent.

Elisabeth Arden Spun-Cream Permanent Wave (Elizabeth Arden, 681 Fifth Ave., N.Y.C.) $3.50 (plus 14c federal tax) for 1¼ oz. shampoo, 4 fl. oz. wave lotion, ⅗ oz. neutralizer, curlers, hairpins, curl stick, end papers, and cap. Essential ingredient of waving lotion, 7.6% solution of ammonium thioglycolate; neutralizer, potassium bromate. Contained lanolin. Contained surface active agent. Directions found confusing and difficult to follow.

Pinwae Pin-Curl Permanent (Distributed by GG, Inc., San Gabriel, Calif.) $1.25 (plus 25c federal tax) for 4 fl. oz. waving lotion and .50 oz. neutralizer. Essential ingredient of waving lotion, 6.6% solution of ammonium thioglycolate; neutralizer, potassium bromate. Analysis did not show presence of lanolin, or of a surface active agent.

Rayve Home Permanent (Pepsodent Div., Lever Bros. Co., 105 W. Adams, Chicago) $2 (plus 15c federal tax) for 3.75 fl. oz. waving lotion, .55 oz. neutralizer, 60 plastic curlers, 70 curler bands, 80 end papers. Essential ingredient of waving lotion, 6.7% solution of ammonium thioglycolate; neutralizer, potassium bromate. Contained lanolin. Contained surface active agent.

Sears Approved Creme Cold Wave Home Permanent (Distributed by Sears, Roebuck & Co.) Refill kit No. 9467, 83c (including 14c federal tax), plus postage, for 4 fl. oz. wave solution, .5 oz. neutralizer, and end papers. Essential ingredient of wave solution, 7.5% solution of ammonium thioglycolate; neutralizer, potassium bromate. Contained surface active agent. Analysis did not show presence of lanolin. Except for this omission, product would have been rated *A. Recommended*.

Toni Cold Wave Home Permanent (The Toni Co., Merchandise Mart Plaza, Chicago) $2.29 (plus 20c federal tax) for 4 fl. oz. wave lotion, .19 av. oz. neutralizer, 2 fl. oz. rinse, 40 curlers, and end papers. Essential ingredient of wave solution, 3.1% solution of ammonium thioglycolate; neutralizer, sodium perborate. Contained lanolin. Contained surface active agent. In a refill kit, the neutralizer was found to be potassium bromate.

Heat-Type Home Permanent

B. Intermediate

Smart-Kurl Home Permanent Wave (Halgar, Inc., 251 E. Grand, Chicago) Refill, 2 oz. wave solution, $1 (plus

5c federal tax). Essential ingredients, ammonium compounds and sodium sulfite. Contained lanolin. This solution is formulated for use with an "infra-red ray" heat unit. As noted in CR's 1947 report on this product, it is difficult for a woman working alone to use the heat device without some danger of burning the hands or the hair. With a second person to assist, the operation could be satisfactorily performed.

Bicycles, Their Care and Safe Operation

IT is estimated there are around 18,000,000 bicycles in use in the United States, most of them operated by teen-agers.

Sooner or later the average child will persuade his perhaps apprehensive parents that he should have a bicycle. Unfortunately, many parents consider their responsibility ended with the purchase of the machine. Actually, their responsibilities have just begun.

The need for careful instruction of young people in good cycling habits cannot be overemphasized. Most bicycle accidents happen when riders ignore the safety rules of the road. The parent should teach the child to obey all road signs; to ride *single file* at the extreme right side of the road; to use front and rear lights at night; and to be a courteous rider, sharing the road with pedestrians, who cannot defend themselves, as well as motorists, who in attempting to save the life of a careless bicyclist may cause a serious or fatal accident involving themselves and others. The cyclist should be taught to avoid show-off tricks such as riding "no hands" or "no feet"; zigzagging; pedalling down hill; hitching onto other vehicles; and riding two or three people on a bicycle built for one.

In most of the accidents involving automobiles and bicycles, the cyclist has been found to be at fault. A recent analysis of accidents has shown that 25 percent were caused by the cyclist's making improper turns; 17 percent by disregard of traffic controls; 13 percent, carrying an extra rider; 11 percent running into open automobile doors; 10 percent proceeding without having the right of way; 5 percent from cutting in; 5 percent from colliding with parked cars; 5 percent by not riding in single file; smaller numbers of accidents occurred from riding at too high speeds, hitching to moving cars and trucks, riding against traffic, and improper parking.

Care of a Bicycle

Parents should insist that bicycles operated by their children be kept in first-class condition.

A new bicycle can be expected to operate efficiently for some time if properly adjusted, but even though it is not abused, certain parts will become loosened and others will require lubrication. The fork assembly, front wheel, and crank can be lubricated without taking them apart completely. The nuts should be backed off sufficiently to expose the cones and bearings; kerosene can be squirted inside to clean out the dirt and grime; then vaseline or graphite can be introduced; finally the parts should be properly retightened. For the coaster brake, however, only an occasional injection of a few drops of No. 20 automobile oil is required. This can be injected directly into the coaster brake through the oil hole in the hub. All coaster brakes are made of specially hardened materials which should give many thousands of trouble-free miles of service. Squeaky brakes may be an indication of the presence of sludge; sometimes the squeak is caused by the absence of lubricant. In either case, the bicycle should not be used until the coaster brake is properly lubricated. The bicycle frame is constructed with slots to give an easy fit to accommodate the component parts; these parts are then held securely by bolts and nuts. The moving parts (the wheels, fork, and crank) turn on cones and bearings which must be kept properly adjusted. A loose adjustment permits the parts to shift position and allow dirt to enter. This eventually causes damage to the parts. A tight adjustment, on the other hand, may cause the inside parts to lock or freeze and will damage ball races and balls.

Traveling over rough roads, bumping into curbs, hopping off curbs, or dropping the bicycle — all tend to loosen up nuts and adjusting cones. It is therefore very important that the bicycle be checked frequently, and proper adjustments made. After the wheels, crank, and fork have been properly adjusted, all the nuts must be tightened firmly to retain the adjustment.

To prolong the life and increase the service obtained from the tires and tubes, they must be kept properly inflated. Underinflation makes the tires more likely to pick up nails, tacks, or glass, and tires in such condition may also shift position on the rim when the bicycle is started or stopped suddenly. This could cause tearing out of the valve. An overinflated tire may blow out. To avoid punctures, the cyclist should frequently pick the tires clean of foreign particles; any allowed to remain may work through the tire and cause a puncture.

Those interested in a more detailed discussion of how to care for a bicycle should obtain a copy of the book Your Bicycle, by S. Kraynick, published by The Manual Arts Press, Peoria, Ill., available at $1.35 from Science News Letter, Book Department, 1719 N St., N.W., Washington 6, D. C.

Note: Ratings of ten children's bicycles and one British adult's bicycle appeared in the December 1950 issue of CONSUMERS' RESEARCH BULLETIN.

Electric Range Broiler Tests

AN ELECTRIC RANGE should have a broiler which will broil fast and evenly over the whole area of the broiler pan. This is especially important if members of the household like their steak rare (underdone to the Englishman), and broiled, that is, well browned on the outside, rather than "cooked." A good choice of "broiling distances" that will permit one to put either a thick or a thin steak close to the heating element is a matter of real importance, and should be looked into in buying any range, especially if broiling is a method frequently used for cooking meat and fish.

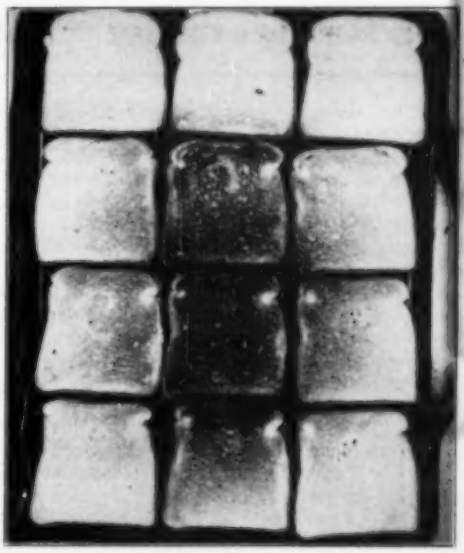
Special broiler tests have been made on eight of the nine electric ranges which were reported on in the July 1950 BULLETIN. Each oven broiler unit was tested for speed of broiling and for uniformity of heating pattern. All ovens had several shelf positions. Evenness of pattern and speed of broiling were determined from the results obtained on samples of toast. The bread used for these tests was of the same brand, was dated, and was purchased on the day of each test run. As a check on the results obtained using the toasting of bread as a method, large, thick, sirloin steaks were broiled in one of the highest speed and in one of the lowest speed electric range oven broilers. The steaks were broiled "rare," following the directions of the stove manufacturer's instruction manual. The high speed broiler (*Hotpoint*) produced a fairly good rare steak with its outside browned, but not well browned; in the slow speed broiler (*Philco*) the steak was left undone throughout, in the same time of cooking, with its surfaces "poorly finished." Additional cooking of the steak in the slow broiler to obtain a reasonably well-browned outside resulted in its being done too much on the inside for a rare steak. Even for meat that is to be well done, it is not desirable that a broiler should supply heat too slowly; the result is likely to be an unappetizing one, at least for anyone who is particular about his broiled meats.

If after an electric stove has been installed, there are certain areas in the broiler heating element which are a much brighter red than others when the unit is energized, it is suggested that a replacement be requested from the dealer. Such areas indicate poor quality control during assembly of the element and are a likely cause of hot-spots which would be especially noticeable when toasting a full tray of bread, for instance. They are also likely to cause premature failure of the oven heating element.

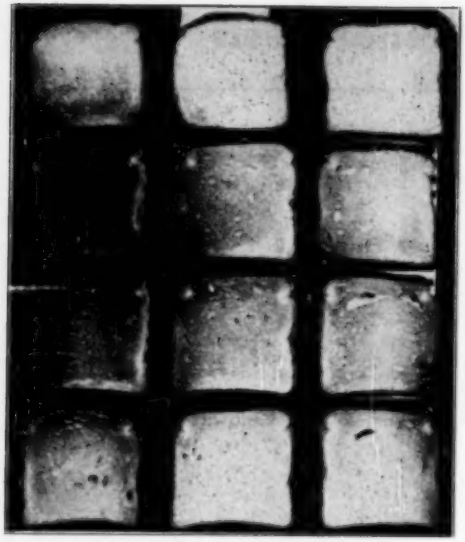
Each illustration shows the heat distribution pattern of a test with a separation of as near two inches as possible in the particular stove between the heater element and the bread.

The following ratings apply only to the oven broiler unit of each of the ranges listed. The general rating of a stove as shown in the July 1950

General Electric: Result of 1-minute test.



Admiral: Result of 1-minute Test



Philco: Result of 3½-minute test.

BULLETIN is indicated at the end of each listing, in parentheses, thus: (*A*). Ratings are cr50.

Relatively Good

General Electric Speedster, Model D11-G1 (General Electric Co., Bridgeport 2, Conn.) Broiler was second best in both speed and evenness of scorch pattern; like *Hotpoint*, did not broil as fast as many would deem desirable. (*A*)

Hotpoint Automatic, Model RC14 (Hotpoint Inc., 5600 W. Taylor St., Chicago 44) Broiler rated first in speed and third in evenness of pattern. (*B*)

Fairly Good

Admiral, Model T-1 (Admiral Corp., 3800 Cortland St., Chicago 47) Broiler: speed, relatively fast; pattern, poor. (*A*)

Frigidaire, Model RM-45 (Frigidaire Div., General Motors Corp., Dayton, Ohio) Broiler: speed, slow; pattern, most even of all ovens tested. (*A*)

Norge, Model E 6 (Norge Div., Borg-Warner Corp., Detroit 26) Broiler: speed, fair; pattern, fair. (*C*)

Wards Deluxe (Montgomery Ward's Cat. No. 68—2083F) Broiler: speed, fair; pattern, fair. (*B*)

Westinghouse Rancho, Model GA-64 (Westinghouse Electric Corp., Mansfield, Ohio) Broiler: speed, fair; pattern, fair. (*B*)

Relatively Poor

Philco, Model 407 (Philco Corp., Philadelphia 34) Broiler: speed, slowest of those tested; pattern, poor. Had glass plate under broiler element, featured as means of preventing spurting of grease onto the heating element and reducing smoking. Toast tests indicated that the speed of broiling could be improved considerably by removal of the glass plate. (*A*)

Gas Refrigerators — A Potential Hazard to Users

CR has several times in the past reported on the inefficiency of gas refrigerators, i.e., their relatively very high cost of operation at average prices for city gas, and the necessity for frequent service calls in some cases. These service calls were required because of sooting up of the burner which resulted in failure to refrigerate properly and produced an odor of unburned gas. Recent developments in New York City indicate that 17 deaths so far this year could have been caused by carbon monoxide from defective gas refrigerators, and at least one was pretty definitely the result of "a defectively burning heating unit of a gas flame refrigerator." The Commissioner of Health has stated:

"Anyone now using a gas refrigerator can avoid danger or illness or death by seeing that the room in which the refrigerator stands is properly ventilated. . . .Proper ventilation can be assured by leaving a window in the room open two inches from the top at all times. The window should be left open day and night, twenty-four hours a day — even in severe weather."

". . .even before a gas refrigerator begins pouring out the deadly and odorless carbon monoxide, it emits other gases which do have an odor." ". . . a gas refrigerator that emits any odor is not working properly and requires immediate repairs."

"Any abnormal behavior on the part of the machine, such as increased gas consumption, failure of refrigerating action or sudden deposit of soot on the wall near the refrigerator also requires immediate attention."

This excellent advice should be carefully followed by all those who have gas refrigerators in their homes. The opinion is gaining ground that the gas refrigerator is not the completely harmless appliance it has long been thought to be. It seems curious that it took public health officials so long to become aware of the problem and to take the needed steps to alert the public on the potential hazard associated with this widely used appliance.

1951 Automobiles — Preliminary Reports

CR is endeavoring to test the 1951 models as fast as they are available, but subscribers must bear in mind that it requires at least six weeks to make the tests (additional time is, of course, required for editorial work and checking and in proofreading and printing). The time required in testing is mainly because the cars have to be broken in for 1500 to 2000 miles before acceleration and gasoline economy tests of any value can be made, and also because it may not be possible to obtain prompt delivery from a dealer even though the car may be advertised as if generally available. The two reports presented here, as in previous instances of studies of cars just on the market, must be considered as preliminary; final ratings cannot be determined until data are available for all cars (since ratings are necessarily *relative* to other makes in the same and near-by price brackets). Acceleration tests are made by approaching the starting line, in high gear, at each of two constant speeds, one of 20 and one of 40 m.p.h., then immediately pressing the accelerator pedal to the floor. In cars with standard transmissions, no changing of gears is involved. The ranges 20 to 50 m.p.h. and 40 to 60 m.p.h. have been selected to give an indication of the ability of the particular car to pass another slower moving car on the road. Acceleration times for these ranges should not be confused with figures often reported in popular magazines indicating the ability of a car to attain a certain speed from a standing start. CR does not consider acceleration times figured by these methods to be representative of acceleration problems arising under normal driving and road conditions.

Some subscribers have raised a question regarding the failure of the *shipping weights* and the *actual weights* to correspond; both of these weights were given in our previous reports (e.g., July 1950 BULLETIN). Shipping weight is the weight as stated by the manufacturer for the car without gasoline, oil, or water; without accessories which are not standard equipment, e.g., radio, heater, overdrive, automatic transmission, etc. The "actual weights" are determined by weighing the car including a full tank of gasoline, oil, water, and certain accessories; separate front and rear-end weights are shown in order that the reader may determine whether the car has a not too unfavorable balance as between front and rear wheel loads (see March 1950 BULLETIN).

1951 Packard 200 Series

The 1951 *Packards* have been radically restyled both inside and out, and by today's standards can doubtless be considered good-looking automobiles, of smart and prepossessing appearance. As to more essential matters, carburetion has been improved, and the spark advance under part-throttle operation has been increased. With the *Ultramatic* transmission, the rated brake horsepower has been increased from 135 to 138 by raising the compression ratio from 7 to 7.5 to 1; manufacturer calls for use of premium or high-test gasoline, a disadvantage with any car, particularly with the possibility now looming of diversion of the best gasoline to military uses. CR's main criticisms of this car are: The hood lacked the needed gauge of metal or appropriate stiffening means, with the result that it showed visible vibration on any but the smoothest road. Hood and trunk latches were hard to latch. The trunk lid was hard to close from the open position, so that exercise of considerable strength would be required of the person handling it. A rather objectionable amount of wind noise was present around the left-hand front small ventilating window.

1951 Packard DeLuxe Model 2401

The gas tank had to be filled very slowly to avoid spillage (the fill pipe enters the tank at the bottom).

The *Ultramatic* drive operated smoothly and without any difficulty. In the opinion of the test drivers, it was considerably more desirable in its action than any of the automatic drives yet tested, including the *Borg-Warner* recently offered on the *Studebaker*. In addition, it was found to be free of the annoyance of the constant up-and-down shifting which is characteristic of the *Hydramatic* when following a slow-moving truck at certain speeds, up a hill.

A— (Tentative)

Packard DeLuxe 51, Model 2401. $2495 delivered factory; $2600 delivered N.Y.C. *Ultramatic* drive, $185; heater, defroster, $75; radio, $92; oil filter, $11.60; special steering wheel, $14. Foam rubber cushions for front seat, $12 extra. Engine: 8 cylinders in line, "L" head, 3½ in. bore x 3¾ in. stroke; 288 cu. in. displacement; rated brake hp., 135 at 3600 rpm. (138 hp. at 3600 rpm. with *Ultramatic* drive); taxable hp., 39; compression ratio, 7 to 1 (7.5 to 1 with *Ultramatic* drive). Engine oil capacity, 7 qt.; cooling water, 20 qt., in pressurized cooling system; gas tank, 20 gal. Equipped with automatic choke. Gear ratio, 3.9 to 1. Symmetrical steering linkage (desirable). Battery, 17-plate, 100-amp.-hr. Wheelbase, 122 in.; over-all length, 210 in.; width, 78 in.; height, 62¾ in. Tread width, front and rear, 59½ in. Tire size, 7.60 x 15, adequate. Brake area, 167 sq. in.; brake factor, 37. Hand brake not protected against freezing. Heavy "X"-type frame. Minimum road clearance, 7½ in. Usable seat widths: front, 57¼ in.; rear, 55½ in. Headroom: front, 38¾ in.; rear, 36¾ in. Leg room: front, 41½ in. maximum; rear, 42 in. Acceleration from 20 to 50 m.p.h. on level road, 10.5 seconds[1] (4.2 ft./sec./sec.); from 40 to 60 m.p.h., 9.5 seconds[1] (3.1 ft./sec./sec.). Gasoline mileage under test conditions at 30 m.p.h., 19.8 m.p.g.; at 50 m.p.h., 16 m.p.g. Average gasoline mileage for first 1700 miles, 13.3 m.p.g. Vision over hood, excellent; to rear, good. Wiper coverage, satisfactory. Fenders welded to body, whence repairs would be difficult and expensive. Accessibility of spare tire, good. Trunk space, good (considerable improvement over previous *Packards*). Rear wheels and tires readily accessible for servicing, when fender skirt is removed. Riding comfort, very good, but not exceptional in any way. Car had a "heavy feel" in driving, and gave the driver the impression of great width, although it was only 1 in. wider than *Mercury* which does not give that impression in driving. (The *Packard* is 5 in. wider than the *Ford*.) Speedometer read approximately 4.5% high at 20 m.p.h., 8.5% high at 35 and 50 m.p.h. Car weight: front, 2236 lb.; rear, 1789 lb.; total, 4025 lb. Shipping weight, 3680 lb. plus 140 lb. for *Ultramatic* transmission, radio, and heater. Annual market depreciation, medium (estimated at between 30 to 40% for first year).

The Henry J

The much heralded *Henry J*, the "new small car in the low-priced field," is not likely to cause much excitement among those who want economical transportation. While the car is small by comparison with any of the "Big Three" makes, it is by no means low in price, and in the opinions of CR engineers leaves *much* to be desired in comparison with *Ford*, *Chevrolet*, and *Plymouth* (or the *Nash Rambler*).

CR's tests were made on a 6-cylinder model which had a delivered price of $1686, comprising $1429, the advertised delivered price, plus: advertising, $20; factory service charge, $10; freight, $54.38; accessory group No. 8 (cigar lighter, hub cap disks, chrome ring, 2 bumper guards, second horn, and 2 rear ash trays), $42.05; overdrive, $96; and undercoating, $35.

Henry J

Without the overdrive, undercoating, or accessory group, the car would have been priced, delivered, at $1513, which is approximately the same price as is asked for a comparable *Ford 6* or *Chevrolet*. The *Ford* and *Chevrolet* clearly offer considerably more automobile for the money.

There was an announced attempt to bring the *Henry J* down to the $1000 class. This was far from a success, as the $1500 price indicates. The *Henry J* has many shortcomings and inconveniences. For example, elimination of a trunk lid makes it practically impossible to get anything but small parcels into the trunk space with ease, and removal of the spare tire is difficult. The rear windows and the small front windows normally pivoted in automobiles, are fixed and cannot be opened; the glove compartment has been eliminated and replaced by a pleated fabric pocket on the right side under the dash which was small and inconvenient to use; floor mats were of poor quality and fitted badly. No ventilating louvres were provided; this would be mitigated somewhat if the car had been purchased with a heater with fresh air intake. The best trip gasoline mileage obtained was 23.6 m.p.g. using the overdrive (in marked contrast to the 30-35 m.p.g. advertised). The rear seat was uncomfortable, due partly to insufficient padding of the seat back. In short, the car would seem to be one that would have been priced more reasonably at around $900 to $1000, from the consumer's standpoint.

Riding quality was fair in the front seat, poor in the rear. Leg room was ample in the front, but skimped in the rear. Road-holding qualities were fair up to about 50 m.p.h.; above that speed it was not easy to keep the car on the road. The light rear (480 lb. lighter than front) made the car susceptible to skidding, particularly when there were no passengers in rear seat. The engine, made by

[1]With *Ultramatic* drive.

Willys-Overland, appeared to have ample power, but as this is a new engine, it cannot be known for some time how it will stand up in service.

C. Not Recommended (Tentative)

Henry J (Kaiser-Frazer Corp.) $1429 delivered factory; $1513 delivered N.Y.C. Overdrive, $96 extra. Engine: 6 cylinder, "L" head, 3⅛ in. bore x 3½ in. stroke; 161 cu. in. displacement; rated brake hp., 80 at 3800 rpm.; taxable hp., 23.4; compression ratio, 7 to 1. Engine oil capacity, 5 qt.; cooling water, 10 qt.; gas tank, 13 gal. Gear ratio, 4.10 to 1, standard; 4.55/3.18 to 1 with overdrive. Battery, 100-amp.-hr. Wheelbase, 100 in.; over-all length, 174¼ in.; over-all width, 70 in.; height, 60 in. Tread width, front and rear, 54 in. Tire size, 5.90 x 15, adequate. Brake area, 125 sq. in.; brake factor, 43. Hand brake adequately protected against freezing. Minimum road clearance, 7½ in. Usable seat widths: front, 53¾ in.; rear, 51¼ in. Headroom: front, 39½ in.; rear, 36 in. Leg room: front, 41 in.; rear, 38 in., but distance between back of front seat and front of rear when front seat adjusted for maximum room in front was inadequate. Average gasoline mileage for first 1500 miles, 21.0 m.p.g. Acceleration from 20 to 50 m.p.h. on level road, 11.2 seconds* (3.9 ft./sec./sec.), very good; from 40 to 60 m.p.h., 9 seconds* (3.3 ft./sec./sec.), very good. Box section frame. Vision over hood, excellent; toward the rear, only fair. Accessibility of spare tire, poor. Trunk space, adequate, but absence of trunk lid and necessity of putting things into trunk space through car doors makes it difficult to use effectively the space available. Wheels and tires, readily accessible for servicing. Riding comfort: front seat, fair; rear seat, poor. Car weight: front, 1510 lb.; rear, 1030 lb.; total, 2540 lb. Shipping weight, 2328 lb. Depreciation likely to be high.

*With overdrive locked out.

Causes of Tire Failures

THE lasting qualities of tires are a matter of great concern to a good many people at the present time in view of the recent rises in prices for tires and probable scarcity of supplies in the near future. A further factor which makes conservation of present tires important is that new tires will undoubtedly be of lower quality as manufacturers carry out government orders increasing the percentage of synthetic rubber, which is to be used to replace a part of the natural rubber needed for military supplies. For these and other reasons, it is of interest to consider the various types of tire failure and their frequency. One of CR's consultants who has made a study of the subject reports that:

Punctures are the most frequent cause of tire failure. The frequency of punctures increases as the tire becomes worn, because the thinner tread permits easier penetration. Periodic inspection of the tread should be made each time the car is lubricated (or at 1000-mile intervals) in order to detect and remove small tacks, and bits of wire, glass, and other sharp objects.

Impact breaks result in two kinds of damage — ruptures of fabric and rim bruises. Ruptures, or the so-called "star breaks," are most easily detected on the outside of the tire, and by bumps or bulges on the tread or side walls. When a "star break" has occurred, a small area of the tread will appear smooth, while the rest has a normal appearance. Rim bruises are harder to detect, but usually the rubber breaks away from the carcass and shows cracks or separation. Impact breaks are caused by a sharp stone in the road, or by the tire's hitting a sharp-edged chuck hole, or rubbing against the curb. Frequently an impact break causes a flat by forcing the rubber of the inner tube into the internal break, and so ruining the tube (if the damage is extensive). The frequency of this type of failure is increased when tire inflation pressures are too low.

Side-wall cracking may be due to scuffing of the tire on curbs or it may be due to a special type of defect in a tire. Scuffed areas are easily detected by examination.

Groove cracking or splitting will occur in a tire that has been cured too long in the mold in the process of manufacture. Too long a cure produces brittleness; too short a cure reduces the wearing life of the tread. Too low inflation pressure will increase the frequency of failure, as in the case of side-wall cracking. The consumer who buys a tire that develops side-wall cracking or groove cracking is justified in asking that the manufacturer make a replacement — provided he has maintained inflation pressures at or somewhat above the manufacturer's established limit.

Blowouts are one of the most infrequent causes of tire failure today. With tires having pressures in the 25- to 30-lb. range, a bulge sufficient to cause a heavy bump or thump against the roadway makes its appearance before an actual blowout occurs. A tire must be in poor condition to blow out, in any case. Whenever a tire is removed from the rim for repair of a puncture, it should be examined internally not only to find the cause of the flat, but to check for any evidence of fabric failure, such as ply separation, and scuffed or torn plies. If the tube is scuffed or shows marks of being folded, it should be replaced. A tire containing a "boot" is never safe.

The average expected life of a tire is now around 23,000 miles.

Six Electric Blankets, an Electric Sheet, and a Foot Warmer

DURING the past several years, CR has spent a relatively large amount of time and money in attempting to develop a method for testing electric blankets. It is known that much research has been directed toward the problem by other laboratories, too, but so far as we can learn, a test method which will give definitive and practically useful results, such as can be obtained for washing machines or refrigerators, for example, has not been developed.

The tests of electric blankets reported in CONSUMERS' RESEARCH BULLETIN for February and November 1947 and the tests made on the blankets included in the listings indicate that, as would be expected, any electric blanket will produce a rise in the "between-the-sheets" temperature of the bed on which it is used, as compared with a blanket that is not electrically heated. The amount of this increase will be dependent mainly upon the energy input (in electrical watts) to the blanket and partly upon the insulating effect produced by the particular fibers of which the blanket is made, and its construction, and the associated bedclothing and mattress.

Since the amount of the increase in "between-the-sheets" temperature must then be evaluated in relation to its effect on the comfort of the individual using the blanket, a test procedure will have to be developed which will take into account the widely varying preferences of different individuals for conditions of sleeping comfort; at the present time, no known test method is available which will even approximately reflect these conditions.

As a sidelight to indicate one of the many directions in which such technical studies may turn in seeking to arrive at an answer to an unusual problem, readers may be interested in knowing about "Alexander." "Alexander" was a dummy, 5 feet 9 inches tall, which was constructed by one laboratory to ascertain the effect of the release of heat by a person in the bed under an electric blanket (since several engineers were of the opinion that any tests on an electric blanket without a person, or the equivalent, under the sheet would have no useful meaning). "Alexander" was wound with an electric heating element in which the amount of heat given off could be varied easily within the limits of the heat given off by the body of a sleeping person, equivalent to about 50 to 60 watts. The test results did indicate that temperatures between the sheets were higher (by from 15 to 20 degrees) than when the blanket was energized without any heat source in the bed, but the method did not bring to light any new information, and it did not lead to any useful suggestions for a different means of attack on the problem of comfort conditions in use of an electrically heated blanket.

Supplying heat over the sleeper from an electric blanket makes it possible to use fewer or lighter bed coverings and still tend to maintain comfortable sleeping conditions during the cooler winter nights. No blanket which CR has tested was able to maintain anything approaching a constant "between-the-sheets" temperature when tested in a room in which the temperatures were varying. In some cases, for instance, it was found that the temperature between the sheets increased with decreasing temperatures in the room and vice versa. Normally, however, a substantial increase or decrease in room temperature will result in a considerable increase or decrease, respectively, in "under-the-blanket" temperatures.

A most important factor to be considered when contemplating the purchase of an electric blanket is the potential fire hazard involved in its use. CR has had several reports of fires which were said to have been started by overheating of a blanket, presumably caused by defective or deteriorated wiring. The results of the electrical leakage measurements and proof-voltage tests are therefore of particular importance. In the voltage breakdown tests, each blanket is immersed in a mild brine solution and subjected to a test voltage of 1240 volts between its input terminals and the metal container for the solution. This test method, which is an accepted one, is more severe than the method usually used with other electrical appliances and rightfully so, considering the special hazards in use of an electric blanket. Leakage current was measured under the same physical arrangement but at a voltage of 120 volts. It is advisable that any blanket which appears to be functioning incorrectly or has frayed or defective wiring should be repaired or replaced immediately. CR considers it wise to replace any electric blanket which has received hard usage over a period of years, rather than to seek to have minor repairs made, or at least to disconnect the plug and connecting wires and use the blanket only as an ordinary bedcovering. (A thorough, factory overhaul is not open to this objection, as it may reasonably be expected to imply completely safe methods of work, under proper technical control.) In the listings, the watts input figures are the manufacturers' ratings; the actual measured watts follow in parentheses, thus, 180 (170). All except the *Pepperell* blanket passed the proof-voltage test. All the blankets studied carried the

Underwriters' Laboratories' Inspection Label. Each blanket control unit was equipped with a visual indicator (a small neon light) to show when the blanket was turned on, and, except as noted, with 9 series-connected safety thermostats located in the blanket, to prevent overheating. Radio interference due to action of the control thermostat, in all the blankets reported on, was a slight click and not considered objectionable. It is to be noted that individual samples may show considerable variations in electrical leakage, and while the leakage currents mentioned are high, they represent the maximum likely to occur if it were possible to contact the complete surface of a wet or damp blanket at one time. However, it must be remembered that there are circumstances in which a blanket might become damp or wet.

Electric Blankets

B. Intermediate

Chatham, Model 650 (Chatham Mfg. Co., 1 E. Main St., Beacon, N.Y.) $30. Labeled 25% wool, 25% cotton, 50% rayon. Marked size, 72 x 84 in.; actual size, 71 x 83 in. Weight of blanket without control, 4.6 lb. Maximum watts input, 170 (180). Leakage current, 0.85 ma., indicative of a slight degree of shock hazard. 1

Textron, Model 501 (Textron Inc., 401 Fifth Ave., New York 16) $30. Labeled 50% wool, 25% cotton, 25% rayon. Marked size, 72 x 86 in.; actual size, 71 x 85 in. Weight of blanket, 5.1 lb. Watts input, 170 (180). Leakage current, 0.6 ma., negligible shock hazard. 1

Fieldcrest, Style 1713 (Fieldcrest Mills, Div. Marshall Field & Co., 88 Worth St., New York 13) $40. Labeled 75% wool, 25% cotton. Marked size, "72 in. wide with plenty of tuck-in length"; actual size, 72 x 84 in. Weight of blanket, 5.1 lb. Watts input, 180 (170). Leakage current, 0.65 ma., not considered excessive. 3

General Electric, Cat. No. PB 12B1 (General Electric Co., Bridgeport 2, Conn.) $45. Labeled 50% wool, 25% cotton, 25% rayon. Marked "double bed size"; actual size, 74 x 85 in. Weight of blanket, 4.9 lb. Watts input, 190 (204). Blanket uses a continuous temperature-sensitive wire paralleling the heating element, which is designed to shut off the blanket in case of overheating (no thermostats in the blanket unit); not considered so certain or sensitive a safeguard as the scattered included thermostats. Leakage current, 1.15 ma., indicative of a slight degree of shock hazard. 3

Proctor, Model 613 (Proctor Electric Co., Third St. and Hunting Pk. Ave., Philadelphia 40) $45. Labeled 75% wool, 25% cotton. Marked "Double-Bed Model"; actual size, 72 x 85 in. Weight of blanket, 4.7 lb. Watts input, 180 (170). Leakage current, 0.8 ma., slight shock hazard. 3

Universal, Model EA-B7603 (Landers, Frary & Clark, New Britain, Conn.) $40. Labeled 75% wool, 25% cotton. Marked size, 72 x 86 in.; actual size, 72 x 88 in. Weight of blanket, 4.6 lb. Watts input, 170 (166). Leakage current, 0.8 ma., slight shock hazard. 3

C. Not Recommended

Pepperell, Model 901 (Pepperell Mfg. Co., 1 E. Main St., Beacon, N.Y.) $30. Labeled 25% wool, 75% rayon. Marked size, 72 x 84 in.; actual size, 73 x 85 in. Weight of blanket, 4.7 lb. Watts input, 170 (actual watts could not be measured because of failure in voltage breakdown test). Leakage current, 3.0 ma., indicative of the presence of some potential shock hazard. Failed proof-voltage (voltage breakdown) test. 1

Electric Sheet

B. Intermediate

Westinghouse Electric Sheet, Model ES-71 (Westinghouse Electric Corp., Mansfield, Ohio) $25. The heater wires are encased in a cotton sheet which is intended to be used between the usual top bed sheet and a lightweight bed covering. Marked size, 70 x 84 in.; actual size after washing, 68 x 80 in. Weight of electric sheet without control, 1.8 lb. Watts input, 140 (137). Six safety thermostats. Leakage current, 0.45 ma., negligible shock hazard.

Foot Warmer

The foot warmer reported on was similar in form to an electric heating pad, but was larger in size and designed to warm slightly, like an electric blanket, a small area (3½ sq. ft.) in a bed. The watts input per square inch of area was only about 1/10 as large as for a heating pad (0.04 watts per square inch as against the 0.4 watts per square inch which is considered the maximum safe input to a heating pad to avoid danger of overheating of the skin of the user, and of fire).

B. Intermediate

General Electric Foot-Warmer, Cat. No. PB 10A1 (General Electric Co., Bridgeport, Conn.) $7.50. Essentially an electric heating pad, but working at much lower temperatures, 15 in. x 33 in., cotton cover. Watts input, 20 (21). Three controlling thermostats in foot warmer. As tested with dummy ("Alexander") in bed and energized, was found to raise temperature in bed area beneath the foot warmer about 6 to 7 degrees; this is believed sufficient for needs in most cases. Thermostat operation, satisfactory. Radio interference, excessive in 2 of 3 samples tested. Electrical insulation, considered adequate; leakage current was very small, less than 0.05 ma., and there was no failure in the breakdown test.

Astral (1-1/2 cu. ft.) Refrigerator (Final Report)

IN the November 1950 BULLETIN, it was stated that check tests would be made on the *Astral* refrigerator, because it had been discovered, at the conclusion of the original tests, that the finned part of the freezing chamber was not properly located; it had apparently jarred out of place during shipment. New tests, with the part in question properly located, revealed no significant differences in performance from the findings previously reported. The rating therefore remains as it was in the November BULLETIN at page 26, *C. Not Recommended.*

Clothes Dryers

IN CR's previous report on clothes dryers in the August 1950 BULLETIN, all of the electrically operated automatic tumbler-type dryers tested were for 230-volt operation, and in the majority of homes would require the installation of a special three-wire circuit at a cost of about $40 to $50, or more. Some manufacturers, realizing that this added expense was a deterrent to sales, have brought out models which can be plugged into existing 115-volt, 15-ampere circuits without calling for special wiring. The chief disadvantage of the 115-volt dryers is that they require about three times as long to dry the clothes as the 230-volt type; they have an important further disadvantage in that they were found to produce two to three times more lint than the 230-volt models. This, of course, corresponds to a greater amount of wear on the clothes in the drying operation.

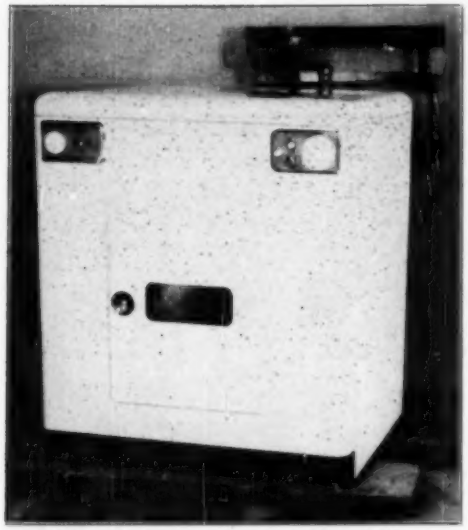
The four dryers reported here include two 115-volt models and two 230-volt models. As the 115-volt model will draw about the maximum current allowable on any one branch circuit, no other appliance, or even a lamp, should be used on the circuit while the dryer is operating. The four dryers were of the automatic tumbler type, in which the clothes to be dried are placed in a perforated drum which revolves slowly. Air, drawn into the unit and heated by electricity, circulates through the drying chamber and is then blown into the room in which the dryer is used. For each load of clothes dried, this warm air will deliver as much as 8 pounds of moisture into the air of the room. Unless unusually good ventilation is provided, the relative humidity will be increased considerably, and the room may become uncomfortable. In winter, marked condensation of water on the windows and on and in the walls will often occur, which may cause serious deterioration of painted surfaces and damage to wood framing. The *Westinghouse* dryers are provided with an outlet for venting the warm, moist air out of doors; this is a desirable feature. A "germicidal [ultraviolet] lamp" said to make the clothes "sweet-smelling" has been installed in the *Frigidaire* models; the usefulness of this is believed to be primarily in its sales appeal.

It is desirable that the thermostat control in a dryer be adjustable so that several top temperatures may be chosen at which the unit will cut off. This will permit drying of rayons and nylons with less chance of damage due to excessive heat, than when the dryer has a fixed upper temperature limit. At the same time, the variable temperature control avoids unnecessary slowness in the action of the dryer due to the fixed control's being set lower than might be necessary to insure against damage to sensitive fabrics.

The accompanying table shows relative operating cost per pound of wet clothes and relative time to dry a pound of wet clothes, computed on the basis of removal of 75 percent of the moisture from the

Dryer	Energy Expended (kwhr.)	Relative Cost (in cents)		Relative Time (in minutes)	
	To dry a 16-lb. load of wet clothes	*To dry a 16-lb. load of wet clothes*	*To dry 1 lb. of wet clothes*	*To dry a 16-lb. load of wet clothes*	*To dry 1 lb. of wet clothes*
Frigidaire T0-60 230 volts	2.94 (2.89) 3.02 (2.77)	5.9 (5.8) 6.1 (5.6)	.37 (.36) .38 (.35)	37.2 (35.6)	2.32 (2.22)
Frigidaire T0-61 115 volts	3.15 (3.04) 3.29 (3.06)	6.3 (6.1) 6.6 (6.1)	.39 (.38) .41 (.38)	116 (113) 119 (112)	7.26 (7.06) 7.44 (7.0)
Westinghouse D-3 230 volts	2.82 (2.60)	5.6 (5.2)	.35 (.32)	37.7 (35.9)	2.36 (2.24)
Westinghouse D-3A, 115 volts	2.66 (2.60)	5.3 (5.2)	.33 (.32)	101 (98)	6.31 (6.12)

Top figures on the two *Frigidaire* dryers represent values obtained with dryer heat control setting on Medium; bottom figures with heat control setting on High



Frigidaire Clothes Dryer shown mounted on platform scale during test. Determination of the amount of moisture that had been extracted from the clothes at a given point in the run was made possible with this arrangement.

clothes. The first figures in each column are from a cold start; figures in parentheses are from a second test run immediately following the first run, with the dryer warm, and with humidity and temperature conditions in the room as they were developed by the first run.

All dryers were tested with an 8-pound load of dry clothes. (The load of damp-dry clothes after spinning or wringing weighs about 16 pounds; the additional 8 pounds represents the water which is to be removed.) The appliances were also tested for electrical leakage, power input (measured power input appears in parentheses after rated input), and performance in drying. The four dryers were listed by Underwriters' Laboratories, Inc.

B. Intermediate

Frigidaire, Model TO-60 (Frigidaire Div., General Motors Corp., Dayton 1, Ohio) $222. Cabinet (space requirements), 36.8 in. high x 31.0 in. wide x 28.0 in. deep. Door at front opens on vertical hinge to right side. Perforated drum with 3 baffles. 3 wire, 230 volts, 60 cycles, 4700 watts (4850). Controls: heat control, marked Low, Medium, High; timer, 0 to 60 minutes with on-off indicator light. Relatively quiet in operation. Efficient lint receiver, located at lower right front of dryer.

Frigidaire, Model TO-61 (Frigidaire Div., General Motors Corp.) $222. Cabinet, 36.8 in. high x 31.0 in. wide x 28.0 in. deep. Door at front opens to right side. Perforated drum with 3 baffles. 2 wire, 115 volts a.c., 1650 watts (1680). Controls: heat control, marked Low, Medium, High; timer, 0 to 130 minutes with on-off indicator light. Relatively quiet in operation. Efficient lint receiver, located at lower right front of dryer.

Westinghouse, Model D-3 (Westinghouse Electric Corp., Mansfield, Ohio) $200. Cabinet, 37 in. high (8 in. clearance required above this, to permit removal of lint trap) x 31 in. wide x 26.8 in. deep, plus a minimum of 2.5 in. at rear of dryer for use with lint trap. Door at front opens downward. Perforated drum with 3 baffles. 3 wire, 230 volts, 5000 watts (5150). Controls: lacked heat control; had timer, with variable settings from Damp to Dry, or 0 to 60 minutes. Was noisier in operation than *Frigidaire* models. Lint trap at top right rear (some lint found on floor). Moist, warm air exhaust can be vented outdoors by the addition of a 4-in. galvanized steel exhaust pipe to one of the escape portals located at the right side or rear of the dryer; this will prevent accumulation of excess moisture within the room.

Westinghouse, Model D-3A (Westinghouse Electric Corp.) $200. Cabinet, 37 in. high (8 in. clearance required above this, to permit removal of lint trap) x 31 in. wide x 26.4 in. deep, plus a minimum of 2.5 in. at rear for use with lint trap. Door at front opens down. Perforated drum with 3 baffles. 2 wire, 115 volts a.c., 1650 watts (1720). Controls: lacked heat control; timer, 0 to 180 minutes. Was noisier than *Frigidaire* models. Lint trap at top of right rear (some lint found on floor). Moist, warm air exhaust can be vented outdoors. Failed in proof-voltage test because of a damaged wire lead at the motor, a fault that was no doubt produced at the time of assembly of the unit in manufacture.

Westinghouse Clothes Dryer

Men's Cotton Pajamas

PAJAMAS are the favorite sleeping attire for American men, according to the findings of a recent government survey, and the men who wear them prefer to have them made of cotton rather than rayon, nylon, and other fabrics. About seven in ten of the pajama-wearers who were interviewed favored cotton, while only one in ten favored rayon.

All of the pajamas tested by Consumers' Research in this study were made of cotton. Three of the thirteen had middy tops, and ten had coats with buttons. There was more variation in the trousers than in the tops. Some had ties at the waist and some had elastic at the waistband. Three different seat constructions were found. The first, identified as "M" for convenience, had leg inseams which formed an inverted Y with the center rear seam of the seat. The second, identified as "G," was similar to the type "M" except for long narrow gores of cloth inserted in the legs and running from the knees or below. These additional seams formed a thickened Y within the arms of the standard Y. The third seat construction was a "balloon seat," and had no center rear seam but had vertical seams to the right and left of the center. These seams with the leg seams formed a crude H. In the listings, this type is identified as "B."

In CR's tests the garments were checked for size, examined for construction details, and for workmanship. Thread counts were made on the fabrics, which were also tested for breaking strength and for shrinkage. The shrinkage tests were made under conditions corresponding to home laundering, much less severe than commercial launderings.

In making the check for sizes, the United States Department of Commerce, Commercial Standard CS15-46, Men's Pajamas Sizes — Woven Fabrics, was followed, except for measuring the "seat" of pajamas for which the method outlined in the standard was found not to be practicable. The six coat and nine trouser dimensions measured on each garment were compared with the standards for the marked size. Of these fifteen dimensions, five were considered as major dimensions. These were the chest and armhole of the coat, and the waist, seat, and thigh of the trouser. It was held that deficiencies in measurements at any of these places would cause binding and discomfort more than other dimensional errors.

The examinations for construction and workmanship included examinations of the buttonholes, collar reinforcement, coat cuffs and hems, piping, waistband adjustment, fastening, band width, lap of material at the fly, closure, seat type, trouser cuffs, seams, and stitching.

The fabrics were found to fall into five different classes. There were three grades of broadcloth — Type *1b* (fine, closely-woven durable fabrics that launder well), Type *1a* (fabrics having fewer yarns per square inch and not so strong as Type *1b*), and non-standard broadcloths of still lower thread count and strength. The other fabrics were printed muslin and a fine cloth with a shantung effect.

Laboratory technician examining the tops of the pajamas tested.

The breaking strength data were found to correspond well with the type of fabric. The Type *1b* broadcloth fabric (used in the *Jayson*) was the strongest. The *1a* broadcloths were next in breaking strength; the fabric in the *B.V.D.* pajamas was the strongest, the fabric in the *Pilgrim* the weakest in the group. The printed muslin and the low-count broadcloths were found to have the lowest breaking strength; the *Reliance* and the *Kerry-Knight* fabrics were the weakest.

The comments on fabric shrinkage were based upon the total shrinkage in both directions. Each of the five best fabrics had a total shrinkage (warp and filling directions) of less than 1.5%; the poorest fabrics a total of more than 6.8%, with more than 5% in the warp direction. Combined shrinkage of less than 4% was judged acceptable.

Except where noted, pajamas had coat tops.

A. Recommended

Brent (Montgomery Ward's Cat. No. 35—4373) $3.98, plus postage. Middy top. Type "M" trousers with elastic section in back of waistband, and 3 size adjustments. *Sanforized* Type *1a* broadcloth with good break-

ing strength. Shrinkage, low. Workmanship and construction, good. Compliance with size requirements, good. Not listed in current catalog. 2

Weldon "Sleep-form" (Lubin Weeker Co., 1270 Broadway, New York 1) $3.95. Middy top. Type "M" trousers with elastic section in back of waistband, and 3 size adjustments. *Sanforized* Type *1a* broadcloth with good breaking strength. Shrinkage, low. Workmanship and construction, good. Compliance with size requirements, poor, but good pajamas otherwise. 2

Jayson (F. Jacobson & Sons Inc., 1115 Broadway, New York 10) $5. Type "M" trousers, tied at the waist. *Sanforized* Type *1b* broadcloth with very good breaking strength. Shrinkage, low. Workmanship and construction, good. Compliance with size requirements, fairly good. 3

Textron (Textron Mills, Providence, R.I.) $4.95. Type "M" trousers, tied at waist. *Sanforized* material with shantung effect with only fair breaking strength. Shrinkage, low. Workmanship and construction, good. Compliance with size requirements, good. 3

B. Intermediate

Reliance "Aywon" (Reliance Mfg. Co., Chicago) $2.89. "G" trousers, tied at waist. *Sanforized* print cloth, similar to muslin, with low breaking strength. Shrinkage, low. Workmanship and construction, fair. Compliance with size requirements, good. 1

Enro "Comfo-Ty" (Enro Shirt Co., Louisville, Ky.) $3.95. "G" trousers, tied at waist. Low-count broadcloth with only fair breaking strength. Shrinkage, within acceptable limits. Workmanship and construction, fair. Compliance with size requirements, good. 2

Faultless, No-belt (Wilson Bros., Merchandise Mart Plaza, Chicago) $3.95. "B" trousers had elastic section in back of waistband, and 2 size adjustments. Type *1a* broadcloth, with good breaking strength. Shrinkage, somewhat high. Workmanship and construction, fair. Compliance with size requirements, good. 2

Pilgrim (Sears-Roebuck's Cat. No. 33—995) $3.94, plus postage. "M" trousers, tied at waist. *Sanforized* Type *1a* broadcloth with good breaking strength. Shrinkage, within acceptable limits (though in warp direction was 2.5%, a little more than is usually expected of *Sanforized* fabrics). Workmanship and construction, good. Compliance with size requirements, poor; was under size in almost all dimensions. Not listed in current catalog. 2

Van Heusen (Phillips-Jones Corp., 1225 Broadway, New York 1) $4.98. "G" trousers, tied at waist. Type *1a* broadcloth with good breaking strength. Shrinkage, excessive. Workmanship and construction, fair. Compliance with size requirements, good. 3

C. Not Recommended

Kerry-Knight (Rice-Stix Co., Inc., Tenth and Washington, St. Louis) $2.98. "G" trousers had elastic section in back of waistband, and 2 size adjustments. Low-count broadcloth with low breaking strength. Shrinkage, somewhat high. Workmanship and construction, judged poor. Compliance with size requirements, poor. 1

Fleetway (Stadium Mfg. Co., Inc., Empire State Bldg., New York 1) $2.95. Middy top. "B" trousers had elastic section in back of waistband, and 5 size adjustments. Low-count broadcloth with only fair breaking strength. Shrinkage, somewhat high. Workmanship and construction, fair. Compliance with size requirements, good. These pajamas had an extra underarm pleat. 1

B.V.D. (The B.V.D. Corp., 350 Fifth Ave., New York 1) $3.95. "G" trousers, tied at waist. Type *1a* broadcloth with good breaking strength. Shrinkage, excessive. Workmanship and construction, fair. Compliance with size requirements, fair. 2

Manhattan (Manhattan Shirt Co., 444 Madison Ave., New York 22) $3.95. "G" trousers, tied at waist. Type *1a* broadcloth with good breaking strength. Shrinkage, excessive. Workmanship and construction, fair. Compliance with size requirements, fair. 2

Corrections and Emendations to Consumers' Research Annual Cumulative Bulletin (ACB) and Monthly Bulletins

Ten Portable Typewriters
Page 15
Oct. '50 Bulletin

The first sentence of last paragraph in column 1 should be changed by omission of the words "touch control" to read, "All but two of the machines. . .were provided with a device permitting some adjustment of key tension by the operator. . ."; and in the next sentence delete the words "touch control" and substitute "this device"; the same correction applies where "touch control" appears in the listings, with the exception of the *Royal* portables. "Touch Control" is the registered trade name of the particular device used by the Royal Typewriter Co. for key-tension adjustment, and the term is therefore not applicable to machines of other makes. ¶Also to be noted: *New models* of *Royal* brands already tested by CR, viz., *Royal Quiet DeLuxe* and *Royal Arrow*, became available to consumers at about the time CR's Oct. '50 BULLETIN was issued. CR expects to report on these two new models, a new model of the *Royal Companion*, and also on an *Underwood Fingerflite*.

Home Building
Col. 382
ACB '50-'51

The correct address of Building Officials Conference of America is 51 E. 42 St., New York 17 (not 51 E. 51 St., New York 22).

Mixture for producing an extremely thin coating of silver on certain metals and alloys
Page 26, Col. 2
Sept. '50 Bulletin

The proportions in formula 1 should have been as follows:

Silver nitrate or chloride	10 parts
Tartaric acid or cream of tartar	20 "
Table salt	20 "
Precipitated chalk	20 "

Sufficient water to make a thick paste.

Off the Editor's Chest

(*Continued from page 2*)

basis, to keep purchasing power down to the level of available civilian goods." With automobile dealers and appliance shops in various sections of the country complaining over their lack of sales in the latter part of 1950, it would certainly appear that the tax increase of last October had made a very substantial dent in the consumer's purchasing power. It would be hard, indeed, to imagine why it would not have that effect.

Perhaps an even clearer picture of just what consumers can expect from government control of production facilities was given by Louis J. Paradiso, chief statistician, Office of Business Economics of the Commerce Department. Mr. Paradiso, as reported in Tide magazine, took note of the decline in sales of automobiles, but advanced the opinion that this decline would be modified by the "large holdings of liquid assets" in consumers' hands since "all income groups had 'some' government bonds and bank deposits they could use if they wished." Evidently, so long as consumers still have some money in the bank or in negotiable bonds, they have "excess purchasing power." The government economist further predicted that rising income due to war profits and war plant wages coupled with the expected cutback in production of automobiles, refrigerators, freezers, and other appliances would bring a shift in spending to "soft goods." In this field he suggested that producers, again quoting Tide, "might make some effort to *soak up excess purchasing power by cutting down on output of low-priced goods*, and emphasize more expensive lines as during World War II." (Italics ours — CR.)

Since the statistician of the Commerce Department is hardly a policy-making official on major economic matters, he undoubtedly reflects merely what is the accepted thinking in government circles, and it is obvious that consumers have been chosen to be the sacrificial lambs on the altar of the new "garrison state"; that businessmen are even to be encouraged to push high-priced products as against cheaper ones to make sure that excess purchasing power is fully "sopped up" and made unavailable for the satisfaction of consumer wants. The bureaucrats apparently fear that even increased taxes will not deplete the consumer's earnings fast enough. As a brilliant literary critic once remarked, "The power to do things for you involves the power to do things to you." The wisdom of her remark that went unheeded some years ago will be apparent to those who have put their trust in the protestations of officials and their supporters who advocated the benefits of the welfare state. It is clear that consumer-taxpayers' interests are not going to be taken care of, and the officials responsible don't even say they are sorry about their assumption of their new duty to penalize those who believe in saving part of their income and those who have the habit of not wishing to pay more than necessary for the things which they buy. In making one's personal plans for the future, it is well to know just what those who direct our economic and political destinies have in mind for us at this time.

Winter Driving Hazards

A REPORT recently issued by the National Safety Council, 425 N. Michigan Ave., Chicago 11, shows that tire chains were far superior in stopping a car on smooth or glare ice to the heavily-cleated "mud-snow" tires or so-called "winterized" tires. In fact, on ice, several of the special tires tested were no better and under some conditions were even worse than conventional natural rubber tires; they approached chain performance only on loosely packed snow and granular ice.

Other important conclusions reached from these tests were:

1. Best control of a car on ice is obtained by leaving the clutch engaged and pumping the brake pedal rapidly.

2. The over-all improvement obtained by the use of special winter tires is not sufficient to warrant less care or precaution when driving on slippery surfaces.

3. In stopping, and in maintaining traction on snow and ice, natural rubber tires were 10 to 50 percent superior to tires of cold synthetic rubber, although the latter were about 7 percent better than natural rubber in resistance to skidding when turning, on ice.

4. Cars with fluid couplings and automatic or semiautomatic transmissions can be controlled better on ice than cars with standard transmissions. However, CR has found that cars with standard transmissions are much more safely and certainly controlled in climbing a slippery hill, on a light coating of snow, for example.

The illustrated 35-page report on effectiveness of winterized and mud-snow tires is available from the Council at 25 cents.

RATINGS of MOTION PICTURES

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Chicago Daily Tribune, Cue, Daily News (N.Y.), *The Exhibitor, Harrison's Reports, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, Parents' Magazine, Release of the D.A.R. Preview Committee, Reviews and Ratings* by the Protestant Motion Picture Council, *Successful Farming, Time, Times Herald* (Washington, D.C.), *Variety* (weekly), *Weekly Guide to Selected Motion Pictures* (National Board of Review of Motion Pictures, Inc.).

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
—	2	5	**Across the Badlands**	*mus-wes AYC*
5	8	1	**All About Eve**	*dr A*
—	8	3	**American Guerrilla in the Philippines**	*war-dr-c A*
—	1	3	**Arizona Territory**	*wes AYC*
—	7	3	**Armored Car Robbery**	*cri-mel A*
—	—	4	**Arshin Takes a Wife**	*mus-com A*
—	2	5	**Avengers, The**	*mel A*
2	3	—	**Beaver Valley**	*doc-c AYC*
—	5	5	**Between Midnight and Dawn**	*cri-mel A*
—	5	1	**Beyond the Purple Hills**	*mus-wes-c AYC*
—	3	2	**Big Timber**	*mel AYC*
—	6	3	**Bitter Rice**	*dr A*
2	4	7	**Black Rose, The**	*adv-c A*
—	3	1	**Blazing Sun, The**	*wes-c AYC*
—	—	3	**Blood and Fire**	*dr A*
—	7	2	**Blue Lamp, The**	*cri-dr A*
—	4	1	**Blues Busters**	*mus-com A*
—	—	5	**Bomba and the Hidden City**	*adv AYC*
—	7	2	**Bomba and the Lost Volcano**	*mel AYC*
—	1	3	**Border Rangers**	*wes AYC*
—	—	6	**Border Treasure**	*wes AYC*
—	5	11	**Born to be Bad**	*dr A*
—	1	2	**Boys in Brown**	*dr A*
—	5	12	**Breaking Point, The**	*dr A*
2	5	3	**Breakthrough**	*war-dr A*
—	6	10	**Bright Leaf**	*dr A*
4	11	1	**Broken Arrow**	*dr-c AYC*
—	1	5	**Bullet for Stefano**	*dr A*
—	4	5	**Bunco Squad**	*cri-mel A*
—	7	5	**Cariboo Trail, The**	*wes-c AYC*
—	7	1	**Cassino to Korea**	*war-doc AY*
—	2	4	**Chain Gang**	*cri-mel A*
—	1	3	**Cheat, The**	*dr A*
—	—	5	**Colorado Ranger**	*wes AYC*
—	5	6	**Convicted**	*dr A*
1	6	7	**Copper Canyon**	*mel-c A*
—	1	2	**Cossacks of the Kuban**	*mus-com-c A*
1	5	1	**Country Fair**	*dr-c A*
—	2	4	**Covered Wagon Raid**	*wes AYC*
1	7	7	**Crisis**	*soc-dr A*
1	4	3	**Cyrano de Bergerac**	*dr A*
—	3	3	**Dancing Years, The**	*mus-com-c A*
—	7	8	**Dark City**	*mys-mel A*
—	8	1	**David Harding, Counterspy**	*mys-mel AYC*
2	4	1	**Daybreak in Udi**	*doc A*
—	1	3	**Dear Mr. Prohack**	*com A*
—	5	2	**Death of a Dream**	*doc A*
—	9	5	**Deported**	*dr A*
—	3	5	**Desert Hawk, The**	*adv-c A*
—	2	5	**Destination Big House**	*mel A*
2	12	2	**Destination Moon**	*dr-c AYC*
—	1	7	**Destination Murder**	*cri-mel A*
—	8	8	**Devil's Doorway**	*wes AYC*
—	5	3	**Dial 1119**	*cri-mel A*
—	6	4	**Difficult Years**	*war-dr A*
—	1	3	**Distant Journey**	*war-dr A*
—	10	6	**Duchess of Idaho**	*mus-com-c AYC*
—	5	14	**Edge of Doom**	*dr A*
—	2	1	**Ellen**	*mys-mel A*
—	2	3	**Emergency Wedding**	*com A*
—	11	1	**Eye Witness, The**	*mys A*
1	11	4	**Fancy Pants**	*mus-com AYC*
2	7	1	**Farewell to Yesterday**	*propaganda-doc A*
—	—	3	**Fast on the Draw**	*wes AYC*
—	1	4	**Father Makes Good**	*com A*
—	2	4	**Federal Man**	*cri-mel A*
—	12	1	**50 Years Before Your Eyes**	*doc AY*
—	1	4	**Film Without a Name**	*com A*
—	7	5	**Fireball, The**	*mel AYC*
1	9	3	**Flame and the Arrow, The**	*dr-c A*
—	3	5	**Flesh Will Surrender**	*dr A*
—	1	3	**For Them That Trespass**	*cri-dr A*
—	4	6	**Foreign Legion, The**	*com AYC*
—	3	2	**Frightened City**	*mel A*
—	5	3	**Frisco Tornado**	*wes AYC*
—	7	4	**Fuller Brush Girl, The**	*com A*
1	6	11	**Furies, The**	*wes A*
—	3	1	**General and the Senorita, The**	*dr A*
—	—	4	**Girl in a Million, A**	*com A*
3	10	4	**Glass Menagerie, The**	*dr A*
—	3	1	**Golden Salamander**	*cri-mel A*
—	9	4	**Good Humor Man, The**	*com AYC*
—	—	7	**Good Time Girl**	*mel A*
—	3	—	**Grandma Moses**	*doc AYC*
—	6	5	**Great Jewel Robbery, The**	*cri-mel A*
—	1	3	**Gun Crazy**	*cri-mel AYC*
—	3	1	**Gunfire**	*mel A*
—	1	2	**Gunslingers**	*wes AYC*
—	6	2	**Happiest Days of Your Life, The**	*com A*
1	7	3	**Happy Years, The**	*com-c AYC*
—	7	4	**Harriet Craig**	*dr A*
2	5	—	**Harvey**	*fan A*
—	6	—	**Heart and Soul**	*dr A*
—	4	6	**He's a Cockeyed Wonder**	*com A*
—	9	2	**High Lonesome**	*wes-c AYC*
—	1	4	**Hi-Jacked**	*cri-mel A*
—	6	1	**Hills of Oklahoma**	*mus-wes AYC*
—	5	1	**Hit Parade of 1951**	*mus-com A*
—	1	5	**Hoboes in Paradise**	*fan A*

A	B	C		
—	4	—	**Holiday Rhythm**	*mus-com A*
—	5	—	**Holy Year at the Vatican**	*doc AYC*
—	7	2	**Holy Year, 1950**	*doc AYC*
—	4	—	**Hot Rod**	*mel AYC*
—	1	7	**Humphrey Takes a Chance**	*com AYC*
—	3	5	**I Killed Geronimo**	*wes AYC*
—	2	2	**I Shot Billy the Kid**	*wes AYC*
—	2	7	**If This Be Sin**	*dr A*
—	1	2	**Ignace**	*mus-com A*
1	11	3	**I'll Get By**	*mus-com-c AYC*
—	4	2	**Indian Territory**	*wes AYC*
—	2	2	**Invisible Army, The**	*war-dr A*
—	7	4	**Iroquois Trail, The**	*nov AYC*
—	5	3	**It's a Small World**	*dr A*
1	8	—	**Jackpot, The**	*com A*
—	1	11	**Johnny One Eye**	*dr A*
—	5	3	**Jungle Stampede**	*adv-doc A*
—	1	2	**Kangaroo Kid, The**	*mel AYC*
—	1	3	**Kansas Raiders**	*wes-c A*
—	—	6	**Kill or Be Killed**	*cri-mel A*
5	10	—	**King Solomon's Mines**	*adv-c AYC*
—	6	6	**Kiss Tomorrow Goodbye**	*cri-mel A*
—	5	7	**Lady Without Passport, A**	*dr A*
—	4	1	**Last Holiday**	*dr A*
—	4	3	**Last of the Buccaneers**	*adv-c AYC*
—	—	3	**Law of the Panhandle**	*wes AYC*
—	7	4	**Let's Dance**	*mus-com-c AY*
—	7	7	**Life of Her Own, A**	*dr A*
—	2	6	**Lonely Hearts Bandits**	*mel A*
—	2	4	**Lost People, The**	*war-dr A*
2	12	2	**Louisa**	*com AYC*
—	4	1	**Lucky Losers**	*mel A*
—	4	3	**Mad Queen, The**	*hist-dr A*
—	5	2	**Mad Wednesday (originally set for release in 1947 as The Sin of Harold Diddlebock)**	*com A*
—	9	8	**Madeleine**	*cri-dr A*
—	7	3	**Madness of the Heart**	*dr A*
1	2	—	**Magnificent Yankee, The**	*biog AYC*
—	2	3	**Marriage of Figaro**	*mus-dr A*
—	8	—	**Milkman, The**	*mus-com AYC*
—	3	10	**Miniver Story, The**	*dr A*
2	10	—	**Mister 880**	*dr A*
1	7	—	**Mr. Music**	*mus-com A*
—	7	1	**Mrs. O'Malley and Mr. Malone**	*com A*
1	8	6	**My Blue Heaven**	*mus-com-c A*
—	8	8	**My Friend Irma Goes West**	*mus-com A*
—	4	4	**My Widow and I**	*com A*
—	5	3	**Never a Dull Moment**	*com AYC*
5	7	5	**Next Voice You Hear, The**	*dr AYC*
—	7	7	**Night and the City**	*mys-mel A*
2	9	5	**No Way Out**	*soc-mel A*
—	2	2	**Noah's Ark**	*dr A*
—	—	3	**O Sole Mio**	*mus-dr A*
—	3	3	**Old Frontier, The**	*wes A*
—	3	6	**On the Isle of Samoa**	*mel A*
—	3	4	**Once a Thief**	*mel A*
—	1	4	**Original Sin, The**	*mus-fan A*
—	2	3	**Our Daily Bread**	*propaganda-dr A*
—	5	10	**Outrage**	*dr A*
—	—	7	**Pancho Villa Returns**	*wes AYC*
2	10	5	**Panic in the Streets**	*mel A*
—	—	3	**Paper Gallows, A**	*dr A*
—	5	3	**Paris 1900**	*doc A*
—	5	5	**Paris Waltz, The**	*mus-com A*
—	8	3	**Peggy**	*com-c AYC*
—	12	4	**Petty Girl, The**	*com-c A*
—	1	3	**Pigmy Island**	*mel AYC*
—	2	6	**Pink String and Sealing Wax**	*dr A*
—	6	2	**Prelude to Fame**	*mus-dr A*
—	9	4	**Pretty Baby**	*com A*
—	1	7	**Prisoners in Petticoats**	*cri-mel A*
—	4	—	**Raiders of Tomahawk Creek**	*mus-wes AYC*
—	5	2	**Redwood Forest Trail**	*mus-wes AYC*
—	2	2	**Return of Jesse James, The**	*wes AYC*

A	B	C		
—	5	6	**Return of the Frontiersman**	*wes AYC*
—	5	1	**Rider from Tucson**	*wes A*
—	8	5	**Right Cross**	*dr AYC*
2	7	1	**Rio Grande**	*mus-mel AYC*
—	2	1	**Rio Grande Patrol**	*wes AYC*
—	6	3	**Rocky Mountain**	*mel AYC*
—	6	4	**Rogues of Sherwood Forest**	*adv-c AYC*
—	3	5	**Rookie Fireman**	*mel A*
1	8	3	**Saddle Tramp**	*wes-c AYC*
—	2	6	**Salt Lake Raiders**	*wes AYC*
—	5	2	**Savage Horde, The**	*wes AYC*
—	3	—	**Scarf, The**	*cri-mel A*
—	3	3	**Secrets of Nature**	*doc A*
—	6	2	**September Affair**	*dr A*
—	9	6	**711 Ocean Drive**	*cri-mel A*
—	4	6	**Shakedown**	*cri-mel A*
—	7	4	**Showdown, The**	*wes A*
—	3	5	**Sideshow**	*dr-c AYC*
—	2	1	**Silver Raiders**	*wes AYC*
—	—	3	**Sin of Anna Lans, The**	*dr A*
—	11	5	**Sleeping City, The**	*cri-mel A*
—	5	2	**Snow Dog**	*mel AYC*
—	4	—	**So Long at the Fair**	*mys-mel A*
—	5	7	**So Young, So Bad**	*dr A*
1	7	1	**Southside 1-1000**	*cri-mel AY*
—	1	3	**Souvenir**	*dr A*
—	9	6	**Spy Hunt**	*mel AYC*
—	2	5	**Square Dance Katy**	*mus-com AYC*
—	3	5	**State Penitentiary**	*mel A*
2	12	—	**State Secret**	*mys-mel AYC*
—	5	6	**Stella**	*com A*
—	2	4	**Streets of Ghost Town**	*mus-wes AYC*
2	11	2	**Summer Stock**	*mus-dr-c AYC*
—	4	3	**Sun Sets at Dawn, The**	*cri-dr A*
—	7	1	**Sunset in the West**	*mus-wes-c AYC*
—	3	5	**Surrender**	*wes A*
—	3	2	**Sylvie and the Phantom**	*fan A*
1	11	3	**Tea for Two**	*mus-com-c A*
—	—	4	**Texan Meets Calamity Jane, The**	*wes-c AYC*
—	1	4	**Texas Dynamo**	*mus-wes AYC*
—	1	3	**Third Time Lucky**	*mel A*
—	2	9	**This Side of the Law**	*mel A*
—	8	2	**Three Husbands**	*dr A*
1	12	2	**Three Little Words**	*mus-com-c AYC*
1	11	2	**Three Secrets**	*dr A*
—	—	6	**Timber Fury**	*mel AYC*
—	4	10	**To Please a Lady**	*dr A*
1	9	4	**Toast of New Orleans, The**	*mus-com-c AYC*
—	—	3	**Tougher They Come, The**	*mel-c A*
—	1	3	**Trail of the Rustlers**	*mus-wes AYC*
—	—	4	**Train to Tombstone**	*wes A*
6	13	—	**Treasure Island**	*nov-c AYC*
—	1	6	**Trial Without Jury**	*cri-mel A*
—	5	2	**Trigger, Jr.**	*mus-wes-c AYC*
3	13	—	**Trio**	*dr A*
—	1	3	**Triple Trouble**	*com A*
—	8	4	**Tripoli**	*hist-dr-c A*
—	8	2	**Two Flags West**	*mel AYC*
—	—	5	**Two Orphans**	*dr A*
—	7	2	**Two Weeks With Love**	*mus-com-c AYC*
—	5	6	**Undercover Girl**	*cri-mel A*
—	2	3	**Underworld Story, The**	*mys-mel A*
—	11	5	**Union Station**	*mel A*
—	1	4	**Victors and the Vanquished, The**	*war-dr A*
—	3	4	**Vigilante Hideout**	*wes AYC*
—	6	8	**Walk Softly, Stranger**	*cri-mel A*
—	4	—	**West Point Story, The**	*mus-com A*
—	2	4	**When You're Smiling**	*mus-com AYC*
—	1	7	**Where Danger Lives**	*mys-mel A*
—	10	2	**Where the Sidewalk Ends**	*cri-mel A*
—	7	4	**While the Sun Shines**	*com A*
2	9	3	**White Tower, The**	*dr-c AY*
2	11	1	**Winchester '73**	*wes A*
—	3	4	**With These Hands**	*doc-dr AYC*
—	7	3	**Woman on the Run**	*cri-mel A*
—	1	2	**World Youth Festival**	*doc-c A*
—	7	3	**Wyoming Mail**	*wes-c AY*

The Consumers' Observation Post

(Continued from page 4)

records, Record-Life was found to be effective in removing dust particles and eliminating static charge. It was more useful on new vinylite records than on worn shellac records. Its use is recommended for those to whom the slightest improvement in record performance is desirable; for others, the bother of applying it might outweigh its contribution to their enjoyment. On older records, the first few playings left a sticky deposit on the stylus which had to be cleaned off. Walco Stati-Clean removed the static charge from vinylite records, but left them a bit sticky. It is important as already noted that this product should not be used on shellac records, as it includes material which is a solvent of shellac.

* * *

THOSE PERFUME ADVERTISEMENTS which vividly set forth just how a man reacted when a girl used some particular brand have done their work too well. From Chicago comes a plea in the November issue of The American Perfumer for more restrained use of "heavy" odors. It appears that the women are splashing them on with such a lavish hand that personnel departments are receiving complaints to the effect that an over-perfumed woman can be just as distressing to the olfactory senses of customers and fellow workers as one who has failed to use a deodorant or anti-perspirant. The unpleasantly overpowering effect of excessive perfume has also been noted on buses and trains, and in offices, as well as stores.

All year 'round money-saving information

Whether you are contemplating the purchase of an automobile or just a cake of toilet soap, you will find it helpful to read what CONSUMERS' RESEARCH BULLETIN has to say on the subject before you make up your mind. Each month CR rates a wide variety of products by brand name on the basis of tests and expert examination. Subscription is $3 a year, 12 issues (Canada & Foreign, $3.50).

Once a year the ANNUAL CUMULATIVE BULLETIN, summarizing a wide range of CR's previous findings and presenting as well much new information, is issued, usually in September. The 1951 edition will be available to individual subscribers (for their personal use) at $2 (in addition to the subscription fee); to other individuals at $3.25 (add 25c for Canada & Foreign).

To join our ever growing list of thrifty subscribers, please use the convenient order form on the next page.

NEWLY AVAILABLE OR RECENTLY TESTED:

Permatag Aluminum Markers (Western Growers Supply Co., 2770 E. Walnut St., Pasadena 48, Calif.). 96 markers (4 pkg.), $1, postpaid. Have also been available in single packages of 24 markers for 25 cents, at some F. W. Woolworth Co. stores. These tags for marking plants (1 inch wide and 3-1/2 inches long) include a thin strip of the metal across the top, which is looped around the stem of a plant and passed through a slot in a corner of the tag; this affords a convenient means for fastening the marker to the plant. Identification can be written on the marker with pencil, ball-point pen, or any hard stylus such as an orange stick, by pressing into the metal. Because aluminum is resistant to corrosion in most locations and the writing stands up permanently under action of the weather, these markers should provide a satisfactory means of identification not only for plants and shrubs, but also for many items requiring identification of one kind or another (or a date of purchase or application), which must remain outdoors or in damp places or under other conditions where ordinary paper or cloth tags would deteriorate or fall off or the writing become weak or illegible. The tag has one minor disadvantage, namely, that as it is of metal, it is electrically conductive and on that account there might be some applications where its use (e.g., in tagging an electrical appliance or fitting) would involve hazard or be undesirable for some related reason. The price of the Permatags seems unduly high considering the low cost of material and the manufacturing operation for this simple product.

David Shinemaster (Roger H. David Co., 522 Rossmor Bldg., St. Paul), $2.89. Shown in illustration of shoe polish article (Consumers' Research Bulletin, June 1950, page 15). Device had two rubber-faced clamps, one of which was fastened to a spring that extended to hold any shoe measuring 11-1/2 to 14-1/2 inches. As smaller shoes were not held securely, it would not serve for women's and children's shoes. A wall bracket was provided into which shoe holder fitted, but the holder rattled when shoes were being shined, and the noise was considered objectionable by some users. For men's shoes of sufficient length, the holder was found to be useful by some who tried it, but on loafers and shoes without toe boxes, it was necessary to insert a shoe tree or to stuff the shoes with paper to give the uppers support during the polishing and buffing operation. The usefulness of the appliance seems perhaps too limited, for most families, to be worth the expense and effort involved.

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Washington, N. J.

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PHONOGRAPH RECORDS

BY WALTER A. GRUENINGER

Please Note: In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended. Although nearly all new releases of serious music are heard, space narrows comment, generally, to items which merit high ratings.

Bach: *Concerto for 3 Harpsichords and Strings in C* & **Vivaldi-Bach:** *Concerto for 4 Harpsichords and Strings in A Minor.* Vienna Chamber Orchestra and Soloists under Heiller. Haydn Society LP 1024. $5.85. Two works off the beaten path. Certainly the *3 Harpsichords Concerto* deserves more frequent hearing. Brilliant recording and perceptive performance.
Interpretation AA
Fidelity of Recording AA

Beethoven: *Concerto No. 5* ("Emperor"). Felicitas Karrer (piano) with the Symphony Orchestra of the Viennese Symphonic Society under Wöss. Remington LP 199-1. $1.99. One of the best of the five Remington Classical recordings I have bought. The performance is acceptable, though not the equal of others in the catalog, and the recording is fair, with pinched orchestral sound but more open piano tone. Surface noise is similar to many shellac 78's, considerably higher than any other LP's I have played. Some of this may be due to the plastic surface. . . . . And that, in general, is the *most* that can be said for the low-priced Remington recordings of Grieg's *Piano Concerto* and Schubert's *Symphony No. 1.* Dvorak's *New World Symphony* and *Operatic Arias* sung by Elizabeth Wysor are less effectively performed. Moreover, one disk had a blister on each side. Remington Classical recordings appear to be no better than their popular recordings discussed in the August issue. They do not meet the quality standard set by this column to justify review.
Interpretation B
Fidelity of Recording B

Chopin: *Ballades.* Casadesus (piano). Columbia LP 2137. $3.85. Though uneven in quality, with *No. 1* best, these four *Ballades* rank among Chopin's great works. Casadesus plays them with taste, appropriate energy, and grace. The pitch is steady and the piano tone good though slightly more constricted than Horowitz's reproduction of *Ballade No. 1* in 78 rpm. Victor Set 1165.
Interpretation AA
Fidelity of Recording A

Falla: *Nights in the Gardens of Spain* & **Mozart:** *Concerto No. 23.* Rubinstein (piano) with the St. Louis Symphony Orchestra under Golschmann. RCA Victor LP 1091. $5.45. The Falla is an atmospheric piece, pleasant to hear now and then, but the Mozart is much more joyous and meaty. The Falla is played with good sense of style whereas Rubinstein's Mozart is just a bit superficial. . . but it is buoyant. Excellent reproduction.
Interpretation A
Fidelity of Recording AA

Grieg: *Haugtussa.* Flagstad (soprano). RCA Victor LP 1094. $5.45. Grieg's finest writing, though not his most popular, appears in this song cycle about the mountain maid. It has been newly recorded. Even though some of the bloom has gone from Flagstad's voice, it is beautifully sung and splendidly reproduced. But on neither side do the playing grooves of this 12-in. disk extend more than 2½ in. from the outside, leaving plenty of space for additional music.
Interpretation AA
Fidelity of Recording AA

Haydn: *Two String Quartets* (Op. 64, No. 6 and Op. 76, No. 5). Vienna Konzerthaus Quartet. Westminster LP 50-34. $5.95. Fine works superbly played and clearly recorded in a live studio.
Interpretation AA
Fidelity of Recording AA

Ives: *Third Symphony* & **Five Other Composers:** *Music of the American Revolution.* National Gallery Orchestra under Bales. WCFM LP 1. $5.95. (1120 Connecticut Ave. NW, Washington, D.C.) First recording of the conservative Pulitzer Prize winning Ives symphony and one of the few recorded works of this New Englander. *The Revolutionary Suite* for string orchestra offers a march, minuet, quickstep, etc., from the colonial period — robust, tuneful music. Both compositions are played admirably by a small orchestra. Wide range recording with microphones close in. Quiet surfaces.
Interpretation AA
Fidelity of Recording AA

Menotti: *The Consul.* Powers, Neway and Other Members of the New York Cast under Engel. 4 sides, Decca LP DX 101. $11.70. Though weaknesses appear in the score when it is heard outside of the theater, most of it is good and the mother's lullaby and the big aria of Magda in Act II are exceptional. The composer has made a few cuts as indicated in the illustrated libretto supplied with the set. Expert cast and first class reproduction of voices but instruments sound a trifle edgy. A larger orchestra in the theater and on records would have underscored the tragedy. Quiet surfaces. Altogether a satisfactory, though not perfect, beginning for Decca's new series of serious music releases. And this is the best of the first group of releases with Hindemith's *Four Temperaments* close behind.
Interpretation AA
Fidelity of Recording A

Mozart: *The Impresario.* Gordon, Hunt, Vellucci, Bauman with Chamber Orchestra under Herz. Mercury LP 15025. $3.85. The Singspiel part of the opera, presented in English as a "Comedy with Music in One Act." Despite a tenuous moment or two in the soprano area, there is joy, spirit, and good music here. Voices well recorded but the orchestra lacks richness and depth.
Interpretation AA
Fidelity of Recording A

Palestrina: *Missa Brevis* & *Missa "Ascendo Ad Patrem."* The Welch Chorale under James Welch. 4 sides, Allegro LP 70. $7.70. (5 Columbus Circle, New York 19.) Beautiful examples, well sung by a small group, of the Italian polyphonic style in the spirit of the Catholic Church. Recording close in and clear. Surfaces just about inaudible.
Interpretation AA
Fidelity of Recording AA

Schubert: *Sonata in C Minor.* Webster Aitken (piano). EMS Recordings LP 110. $5.95. EMS, promising the complete piano works of Schubert, brings out No. 1 of his remarkable posthumous sonatas. Aitken recorded it some years ago for the General label, no longer available. He has adequate facility and a fine sense of musical values, playing Schubert with more depth than commonly heard. Excellent recording pressed on red vinylite.
Interpretation AA
Fidelity of Recording AA

Piano Brillante. Chuy Reyes (piano with percussion). Capitol LP 196. $2.85. Rumbas, Sambas and other exotic numbers that offer hi-fi fans a chance to test their equipment. Excellent reproduction of Latin-American maracas, drums, etc.
Interpretation AA
Fidelity of Recording AA

Religious Songs by Rise Stevens (mezzo-soprano). RCA Victor LM-38. $3.85. "Nearer My God to Thee," "Panis Angelicus," "The Holy City," and 3 others sung with reverence and richness. Some of the choral and orchestral effects are not likely to be heard in church but they are not excessive. Good recording. But the recorded band ends a little less than 2 inches from the disk edge, leaving room for one or maybe two more selections per side.
Interpretation AA
Fidelity of Recording AA

* * *

In response to numerous inquiries, I regret to report that the *Victor Treasure Chest* CP 5203 player for 45 rpm. records described as part of my equipment last July is no longer obtainable. It belonged to RCA Victor's expensive Berkshire series, which has been discontinued.

$1.00